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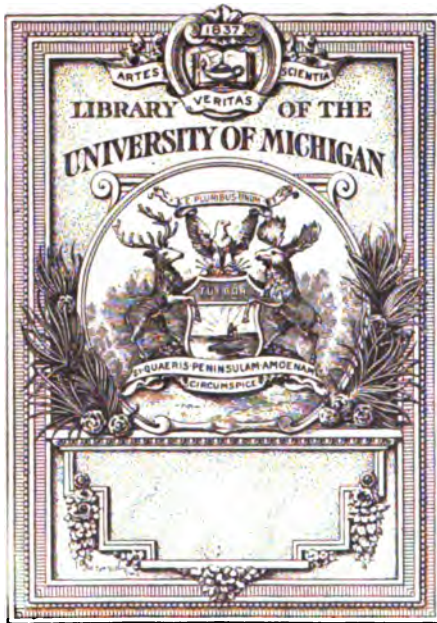
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# ANNUAL REPORTS

OF

## THE PRESIDENT AND THE TREASURER

OF

### HARVARD COLLEGE

1900—01



CAMBRIDGE, MASS.

Published by Harvard University

JANUARY 25, 1902



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# CONTENTS.

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	PAGES
PRESIDENT'S REPORT . . . . .	5-50
REPORTS OF DEPARTMENTS:—	
THE FACULTY OF ARTS AND SCIENCES . . . . .	51-89
THE COLLEGE . . . . .	90-106
THE LAWRENCE SCIENTIFIC SCHOOL . . . . .	107-112
THE GRADUATE SCHOOL . . . . .	113-148
THE DIVINITY SCHOOL . . . . .	149-156
THE LAW SCHOOL . . . . .	157-160
THE FACULTY OF MEDICINE . . . . .	161, 162
THE MEDICAL SCHOOL . . . . .	163-182
THE DENTAL SCHOOL . . . . .	183-186
THE VETERINARY SCHOOL . . . . .	187, 188
THE VETERINARY HOSPITAL . . . . .	189, 190
THE BUSSEY INSTITUTION . . . . .	191
THE LIBRARY . . . . .	192-221
THE GRAY HERBARIUM . . . . .	222-224
THE BOTANIC GARDEN . . . . .	225-230
THE ARNOLD ARBORETUM . . . . .	231, 232
THE CHEMICAL LABORATORY . . . . .	233-236
THE JEFFERSON PHYSICAL LABORATORY . . . . .	237-239
THE PSYCHOLOGICAL LABORATORY . . . . .	240, 241
THE OBSERVATORY . . . . .	242-252
THE MUSEUM OF COMPARATIVE ZOOLOGY . . . . .	253-256
THE ZOOLOGICAL LABORATORY . . . . .	257-261
THE DEPARTMENT OF GEOLOGY AND GEOGRAPHY . . . . .	262-266
THE PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY AND ETHNOLOGY . . . . .	267-274
THE SEMITIC MUSEUM . . . . .	275-278
THE FOGG ART MUSEUM . . . . .	279-283
THE MINERALOGICAL MUSEUM AND LABORATORIES OF MINERALOGY AND PETROGRAPHY . . . . .	284
RADCLIFFE COLLEGE . . . . .	285-288
APPENDIX . . . . .	289-313
INDEX . . . . .	315-320
<hr/>	
TREASURER'S STATEMENT . . . . .	1-93





## PRESIDENT'S REPORT FOR 1900-01.

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TO THE BOARD OF OVERSEERS : —

The President of the University has the honor to submit the following report for the academic year 1900-01, — namely, from September 27, 1900, to September 26, 1901.

Edward William Hooper, a member of the Board of Overseers since the election of 1900, died on the 25th of June, 1901, in the sixty-second year of his age. He was Treasurer of the College from 1876 to 1898 ; and during that period — a difficult and perturbed one, on the whole, for investors — increased the property of the University by at least a million and a quarter of dollars, exclusive of gifts. At the time of his resignation, the President and Fellows put on record their high opinion of his financial judgment and of his disinterested services. Mr. Hooper had been only a short time an elected member of the Board of Overseers, but he was thoroughly familiar with its methods, because of his long ex-officio membership as Treasurer of the University. His election by the Alumni so soon after his retirement from the Corporation was a gratifying expression of their confidence and respect.

John Fiske, another member of the Board of Overseers, died July 4, 1901, in the sixtieth year of his age. Mr. Fiske's first official connection with the University was as University Lecturer on the Positive Philosophy, 1869-71, and Instructor in History during the second half of 1869-70 ; from 1872 to 1879 he was Assistant Librarian ; during 1895-96 he was Lecturer on Campaigns of the Civil War West of the Alleghanies ; during 1896-97 he was Lecturer on Colonial Virginia and the other Southern Colonies ; and he was three times elected to the Board of Overseers, — first in 1879, for a second time in 1885, and for the third time in 1899. Although Mr. Fiske very rarely attended the meetings of the Board, the Alumni

were glad to elect him three times a member, as a tribute to his admirable qualities as lecturer and author. The position of Assistant Librarian was not a congenial one, demanding too great an amount of steady application to routine labors; for Mr. Fiske was an intense and spasmodic worker. As a lecturer and instructor for two years of his early life, he was interesting and inspiring; and the short courses of lectures which he gave in 1895-97 were in the highest degree graphic and stimulating. All his writings were characterized by a clear and fluent style which carried his thought without effort to the minds and hearts of his readers. In the early part of his career as a writer, he was erroneously supposed to be a materialist: he was, in fact, an idealist, as his later works abundantly demonstrated.

Charles Carroll Everett, Bussey Professor of Theology and Dean of the Divinity School, died in Cambridge on the 16th of October, 1900, in the seventy-second year of his age. He had held his professorship since 1869, and had been Dean since 1878. During his long term of service, the Divinity School, which previously had been resorted to almost exclusively by Unitarians, became the resort of students connected with many different denominations. His lectures on theology were always followed with eagerness and delight by students of a great variety of beliefs and denominational affiliations; for he treated his subject in an original way, and in a spirit at once candid, impartial, and comprehensive. In the later years of his service, he also gave very interesting instruction in comparative religion, making this subject contribute to his exposition of the foundations of religion. During the period of his service as Dean, serious changes were made in the policy of the School: the Faculty was enlarged, and was made to represent several denominations; the tuition fee was raised to the level of that of other Cambridge departments of the University; the degree of Bachelor of Arts was required for admission as a candidate for the degree in theology; and the giving of beneficiary aid was restricted, and made to depend on proved merit. These changes were of the gravest character, and all of them except the first were restrictive; they tended to diminish the number of students in the School, while improving their quality. The

attempt to train young men for the ministry of many Protestant denominations, including the Unitarian, was a unique undertaking, which might well have looked formidable to the executive officer of the School. The rise and growth of the Graduate School in Arts and Sciences also affected materially the relations of the Divinity School to the ministry and to the public. Through all these changes the good influence of the Dean was strongly felt, and his high reputation as a religious philosopher and teacher was more and more valuable to the School.

The resignation of Professor Langdell, the second Founder of the Law School, was accepted by the Corporation on the 9th of October, 1900; and he was at once chosen Professor Emeritus. The Corporation entered on their records the following minute:—

“In accepting the resignation of Professor Langdell and electing him Dane Professor Emeritus, the Corporation desire to put on record their appreciation of his unique services. He has been Professor of Law for thirty years, a term of service much longer than the Law School enjoyed from any of his predecessors; he was the first Dean of the Law School, and was Dean for twenty-five years during a period of fundamental reconstruction; he originated a method of teaching law which has proved to be a radical improvement of great value and wide application; finally, he has taught law by voice and pen with profound learning, great accuracy and clearness of statement, and complete devotion to the work of teaching.

“The Corporation recognize Professor Langdell’s contributions to the welfare of the Law School and to the improvement of legal education as sound in theory and effective in practice, and as likely to be of lasting influence for good, not only in Harvard University, but in all universities which prepare young men for the learned professions.”

Two other veteran scholars and teachers retired from the service of the University at the close of the year 1900–01,—Professor Joseph Henry Thayer, of the Class of 1850, and Professor William Watson Goodwin, of the Class of 1851. Both these scholars had devoted their lives to Greek: Professor Thayer, to the New Testament Greek; Professor Goodwin, to the Classical. Professor Thayer was first a minister, and then

a professor in the Andover Theological Seminary. While a professor of that institution, he was chosen a Fellow of Harvard College in 1877; and served as a member of the Board until 1884. Having resigned his professorship at Andover, because of a difference with the trustees concerning subscription to the Andover creed, he was chosen, after an interval, Bussey Professor of New Testament Criticism and Interpretation, as successor to Dr. Ezra Abbot; and this was the office which he resigned at the close of the year under review. Professor Thayer had the keenest interest not only in the language of the New Testament, but in the Canon. His principal work as a scholar was a Greek-English Lexicon of the New Testament, being *Grimm's Wilke's Clavis Novi Testamenti*, translated, revised, and enlarged. As minister, teacher, and scholar Professor Thayer was candid and courageous, but conciliatory and genial, though never lacking in firmness. Since Professor Thayer's resignation as a Fellow of the Corporation, there has been no minister in that Board — a noteworthy departure from former custom.

Professor Goodwin began his service to the University as Tutor in Greek in 1856, but in 1860 was chosen Eliot Professor of Greek Literature, at the early age of twenty-nine. He filled this professorship for forty years. His book on "Greek Moods and Tenses" early established his reputation as a scholar, — a reputation which spread and mounted throughout his long professorial career. As head of the Greek department, he gave instruction at one time or another in the whole range of Greek historians, orators, dramatists, and philosophers; and there were few years in which he was not also carrying on serious literary labors.

Both these American scholars have been for many years well known in Europe. Professor Thayer was one of the committee of Revisers of the New Testament; Professor Goodwin's works have been used in England almost as much as in the United States. On their retirement each of these gentlemen was elected Professor Emeritus.

The Reverend Alexander McKenzie retired from the service of the Board of Overseers as its Secretary at the close of the year 1900-01. He had been Secretary of the Board for twenty-

six years, a term conforming to the traditions of that office.\* Dr. McKenzie was a member of the Board of Overseers from 1872 to 1884; and a member of the first Board of Preachers to the University, serving from 1886 to 1889; he was also a lecturer in the Divinity School in the year 1882-83. Although these direct services to the University have been numerous and valuable, his most important contribution to the welfare of the University has been his service during the past thirty-four years as pastor of the neighboring Orthodox Congregational Church, to which large numbers of students have belonged.

The situation and policy of Harvard University with regard to the degree of Bachelor of Arts is peculiar, — one might almost say unique. It has required a degree in arts or science for admission to every one of its professional schools except the Dental School; and it continues to confer on a very large number of persons the degree of Bachelor of Arts, — 419 in 1900 out of 964 degrees conferred, and 483 in 1901 out of 1,031 degrees conferred.† The next largest number of degrees conferred in any department of the University was 130 degrees of Doctor of Medicine in 1900, and 145 degrees of Bachelor of Laws in 1901. The policy of the University is to make the degree of A.B. the fundamental, primary degree of the University, and to use no other in competition with it. The terms on which this degree is given are liberal, so far as the variety of studies which may be counted toward it is concerned, but the requirements for the degree in examinations to be passed are strict. The University has seen its own requirements within the professional schools greatly raised since 1870; and in medicine, at any rate, the limits of that upward movement have not been reached. Meantime, the examination requirements for admission to Harvard College have increased, if one looks back thirty or twenty years, though not, perhaps, within the last ten years. The secondary schools have responded to the increased requirements of the College;

\* Henry Flynt, Secretary, 1712-1758; Simeon Howard, 1778-1804; John Pierce, 1816-1849.

† Cf. the corresponding figures at Columbia University in 1901, — 134 degrees of Bachelor of Arts out of a total number of 606 degrees conferred.

so that the schools now do a good part of the work which was formerly done in the Freshman year of Harvard College. There can be no doubt that the two governing boards and the Faculty of Arts and Sciences all desire to maintain the degree of Bachelor of Arts in its full significance as the degree representing a general liberal culture.

Recognizing the improvement which has taken place in secondary schools, and believing that the standard of daily work in Harvard College is but a moderate one, so that large numbers of students could do more work without injury to their health and with benefit to their powers of application, a considerable proportion of the members of the Faculty of Arts and Sciences believe that the present requirements for the degree of Bachelor of Arts can be met by a diligent student, or by a student of unusual ability, in three years, and that the College would reap distinct advantages from making a definite offer of the degree in three years under suitable restrictions against superficial and hasty work, and that this could be done without lowering the present standard for the degree. The Faculty of Arts and Sciences gave much time to the consideration of this subject during the year 1900-01, as is fully set forth in the report of the Dean of the Faculty (pp. 83-89); but the Faculty, near the end of the year, refused to adopt a new definition of the requirements for the degree of Bachelor of Arts, prepared by a committee which had given several months to study of the subject. Since the current academic year opened, the Faculty adopted and sent to the Corporation and the Board of Overseers a clear statement of its present practice with regard to recommending for the degree of Bachelor of Arts candidates who have been in residence less than four years. Under this present practice, any young man of industry and fair ability can obtain the degree in three years, if he makes, rather early in his course, an intelligent plan for accomplishing that object.

In April, 1897, the Faculty of Arts and Sciences established a committee called the "Appointment Committee," with Mr. Byron S. Hurlbut as Secretary. It was a large committee, representing all the chief departments of instruction under

that Faculty. The work of this committee has been going on for more than four years, so that it is now possible to give some idea of it. It was copied, with modifications, from the Appointments Bureau of the University of Oxford; and it has been in turn imitated by numerous American universities. During the year under review, a detailed account of the methods of the committee, with specimens of all its blanks, was sent by request to seven colleges and universities.

The number of persons registered with the committee October 1, 1901, was 1,737, — an increase of 713 within two years. By far the largest number of those registered with the committee are teachers. Each person registering, if meaning to teach, mentions the subjects which he feels especially prepared to teach. The number of registrations by subject is 3,792; and the number of subjects mentioned is 71. Ninety-two persons desired business appointments only.

From the beginning, the committee has been endeavoring to ascertain in what institutions of learning, and in what parts of the country, Harvard graduates are teaching, or have recently taught. The list is still very incomplete; but it has been thus far ascertained that Harvard graduates are teaching, or have recently taught, in 535 universities, colleges, and secondary schools, scattered through 51 states, territories, recently acquired islands, and foreign countries. This enumeration does not include superintendencies or principalships of schools.

During the past two years a record has been kept of the requests addressed directly to the committee or its Secretary for persons to fill positions, but not of those addressed to individual members of the committee. These requests numbered in 1900–01, 321 for teachers, 90 for private tutors, and 99 for miscellaneous positions. During the year ending October 1, 1901, 163 teachers' positions are known to have been secured through the direct agency of the committee; and it is supposed that a considerable additional number were really secured, though the committee was not informed of the results. These 163 positions were divided as follows: in secondary schools, 95; in universities and colleges, 54; two-year engagements as tutors, 2; permanent business places, 12. These figures do not include positions of a temporary nature secured during the academic year for undergraduates.

For work during the summer vacation of 1901, 218 resident students registered; for work during the academic year beginning October 1, 1900, 231 resident students registered, of whom 107 desired work as tutors. A great variety of work is secured for undergraduates, both in vacation and in term-time. Tutoring is the best resource; stenography with type-writing a very good one; for many of the professors and instructors of the University give to students much of their lecture-work, correspondence, and copying.

The function of the committee is not limited to securing first places: in the year under review, 48 teachers already at work made special application for a better place, or, at least, for a change of place for the year 1901-02. Of these, so far as the committee is informed, 36 were successful in making a change, 15 of them through the direct agency of the committee. The nature of the places secured during the year is various, extending from positions in elementary schools to professorships in universities. The places were distributed in 31 states, territories, and so forth — 24 were in the Philippines.

The work of the committee is now firmly established; but it is capable of, and should have, large development. With public schools the relations of the committee are not so satisfactory as with private and endowed schools, colleges, and universities. It is only within the last few years that the number of Harvard students definitely fitting themselves for this field has been considerable. Young Harvard men are beginning to realize the opportunities which the great public school systems offer; and superintendencies are attracting well-trained men. The committee should be able to further the wishes of young graduates who desire to enter business houses. In this work the committee can be greatly aided by graduates of the University already well established in business. Another important development of the work should be procuring places for graduates of the professional schools, especially of the schools of medicine and law. The organization of this work, so far as registration is concerned, can easily be accomplished by the coöperation of the Secretaries of the schools; but the willingness of the committee to undertake this particular work must, of course, be brought to the notice of Harvard men who are practicing these professions all over the United States.



The services of the Appointment Committee are rendered gratuitously, the committee having departed in this respect from the practice of the Oxford Appointments Bureau.

The institution called the "sabbatical year" has been decidedly useful to the University, having, indeed, but one drawback, — namely, that a teacher with a family and no resources but his salary can hardly avail himself of it. When this policy was first adopted by the Corporation, it was thought that leave of absence should be given for a complete year only; because it was believed that competent substitutes could be more readily procured for a whole year than for half a year. Of late years, the practice of procuring substitutes from other colleges and universities has come in, and has approved itself to all concerned. Twice substitutes have come from English universities, and many times from American. It having proved easier to get desirable substitutes from other institutions for a half year than for a whole year, the President and Fellows of late have begun to grant leaves of absence for half a year, to the advantage of the staff and without detriment to the University. An incidental advantage of the system has been that some gentlemen who proved to be very acceptable substitutes have afterwards been invited to permanent positions in Harvard University. Thus, during the current year, three full professors will join the University whose merits were first demonstrated here when they were serving as substitutes.

The following table exhibits the number of persons examined for admission to Harvard College in ten successive years, the number admitted, the per cent. admitted, the number admitted "clear," and the per cent. admitted "clear." The figures of the preliminary examination are not included in this table. There is a satisfactory increase in the number of persons examined for admission to the College; but it will be noticed that the increase is not absolutely steady. Three times a slight decrease takes place, and twice the increase is insignificant. The percentage of admissions has distinctly increased, as clearly appears on comparing the average percentage of admission in the first five years with the same average in the

	EXAMINED.			ADMITTED.			PER CENT. ADMITTED.			ADMITTED "CLEAR."			PER CENT. ADMITTED "CLEAR."		
	June.	Sept.	Total.	June.	Sept.	Total.	Ju.	Sep.	Tot.	June.	Sept.	Total.	Ju.	Sep.	Tot.
1892	347	105	452	316	85	401	.91	.81	.89	135	12	147	.39	.11	.33
1893	362	131	493	331	92	423	.91	.70	.86	183	17	200	.51	.13	.41
1894	379	126	505	337	88	425	.89	.70	.84	163	19	182	.43	.15	.36
1895	421	134	555	364	102	466	.86	.76	.84	180	26	206	.43	.19	.37
1896	393	140	533	336	94	430	.85	.67	.81	167	19	186	.42	.14	.35
1897	435	136	571	401	99	500	.92	.73	.88	194	9	203	.45	.07	.36
1898	460	108	568	408	84	492	.89	.82	.87	210	9	219	.46	.09	.39
1899	458	122	580	411	95	506	.90	.78	.87	190	14	204	.41	.11	.35
1900	510	137	647	459	111	570	.90	.81	.88	204	11	215	.40	.08	.33
1901	496	122	618	462	103	565	.93	.84	.91	236	10	246	.48	.08	.40

last five. The per cent. admitted "clear" has not increased, but remains almost the same for the last five years as for the first five, in spite of the unintelligible fluctuations up and down during the ten years. During this period, the requirements for admission have undergone considerable changes; and during the last four years two different methods have been in operation. The figures of the table do not shed much light on the much discussed question whether the new method is, or is not, more difficult than the old. So far as they go, however, they indicate that the partial and gradual adoption of the new method has been accompanied by an increasing percentage of admissions, though not of "clear" admissions. Hereafter, the new method alone will be in operation, and some trustworthy information will soon be obtained concerning the relative difficulty of the new method, as actually administered, and the old.

Many American colleges have imagined, and even affirmed, that success or failure in athletic sports has an immediate influence on the resort to colleges, victory increasing the resort within a year or two, and defeat diminishing it. An inquiry into Harvard experience on this matter may, there-

fore, have some interest. The following table exhibits the victories and defeats of Harvard in competition with Yale for the past ten years; and this exposition is accompanied by the number of preliminary candidates at Harvard, the number of final candidates, the number of the Freshman class at Harvard, the number of the first-year Scientific class at Harvard, the number of the Freshman class at Yale, and the number of the first-year Scientific class at Yale in each year following the athletic victories or defeats which stand in the same line. The table explains itself, except perhaps for the years 1895 and 1896. In those years Harvard did not play with Yale in all of the sports; so that other competitors are mentioned in the table. In addition to the columns containing the athletic results, a column is added for the results in debating.

Calendar Year.	Track Athletics.	Baseball.	Rowing.	Football.	Debats.	Academic Year.	Preliminary Candidates (H. C.).	Final Candidates (H. C.).	Freshman Class (H. C.).	First-Year Class (L. S. S.).	Yale College Freshman Class.	Sheffield S. S. Freshman Class.
1891	H		H	Y		1891-92	428	403	381	19	268	200
1892	H	Tie	Y	Y		1892-93	460	452	409	48	300	207
1893	H	H	Y	Y	H <sup>3</sup>	1893-94	467	493	425	45	315	228
1894	Y	Y	Y	Y	H <sup>3</sup>	1894-95	501	505	399	91	331	250
1895	Y	Y	Y	(Pa)	H	1895-96	470	555	462	106	331	147*
1896	Y	(P)	(C)	(Pa)	Y	1896-97	562	533	416	129	355	170
1897	Y	H	Y	Tie	Y <sup>3</sup>	1897-98	559	571	471	132	300	187
1898	H	Y	Y	H		1898-99	591	563	471	149	333	192
1899	H	Y	Y	H		1899-00	618	580	498	179*	337	187
1899	H	H	H	Tie	H	1900-01	618	647	537	155*	329	199
1900	H	H	Y	Y	H <sup>3</sup>	1901-02	631	618	551	157*	341	245

H = Harvard won; Y = Yale won; P = Princeton won; Pa = University of Pennsylvania won; C = Cornell won.

One might suppose that the most immediate effect of victory or defeat in athletic sports would appear in the number of

\* Increase in requirements for admission.

preliminary candidates and of final candidates for admission in the following year. Examining first the column of preliminary candidates, it will be seen at once that there is no relation between athletic victory or defeat for Harvard, and the increase or decrease of preliminary candidates in the following year. Thus, the years 1894, 1895, and 1896 were years of uniform defeat; yet, on the whole, the number of preliminary candidates increased substantially. The year 1899 was a year of victory; but no increase in the number of preliminary candidates took place. The column headed Final Candidates exhibits a similar result—declining fortune for Harvard is followed twice by small losses and thrice by good gains, and rising fortune is followed once by a small loss, twice by small gains, and once by a large gain. The last four columns of the table permit a comparison between the entering classes at Harvard and those at Yale. In 1893 defeats and victories were even, and in the following academic year Harvard College lost twenty-six Freshmen and Yale college gained sixteen; the Lawrence Scientific School gained forty-six Freshmen and the Sheffield Scientific School gained twenty-two. After the next year, 1894, when Yale was uniformly victorious, the Freshman class at Yale College gained nothing, while at Harvard College that class gained sixty-three; the Lawrence Scientific School gained fifteen, and the Sheffield Scientific School, with increased requirements for admission, lost one hundred and three. After 1895, when Harvard was defeated in every sport, Harvard College lost forty-six, whereas Yale College gained twenty-four; and the Lawrence Scientific School and the Sheffield Scientific School each gained twenty-three; but after 1896, when Harvard was successful in not a single sport, Harvard College gained fifty-five, whereas Yale College lost fifty-five; the Lawrence Scientific School gained three and the Sheffield Scientific School gained seventeen. After 1899, when Harvard won in every sport except football, where there was a tie, Harvard College gained only thirty-nine and Yale College lost but eight; the Lawrence Scientific School lost twenty-four and the Sheffield Scientific School gained twelve. In 1900, Harvard lost both rowing and football to Yale, but in the following academic year Harvard

College gained fourteen, Yale College gaining twelve; the Lawrence Scientific School gained two and the Sheffield Scientific School gained forty-six. In short, it is impossible to trace any clear influence of success or failure in athletic sports on the comparative resort to these two colleges as this resort appears in their respective Freshman classes. Looking at the whole period, the Freshman class at Harvard has gained a much larger percentage than the Freshman class at Yale, although Yale has been decidedly more successful in the athletic sports, and particularly in football and rowing, which are the sports in which colleges and schools, and the general public take the strongest interest.

The following table compares the results at Yale and Princeton, the competitive games being confined to football and base-

Calendar Year.	Baseball.	Football.	Academic Year.	Yale College Freshman Class.	Sheffield S. S. Freshman Class.	Princeton Academic Freshman Class.	Princeton Scientific Freshman Class.
1891	P	Y	1891-92	268	200	168	90
			1892-93	300	207	179	122
1892	Y	Y	1893-94	315	228	140	118
1893	Y	P	1894-95	331	250	130	126*
1894	Y	Y	1895-96	331	147*	135	106*
1895	Y	Y	1896-97	355	170	161	101*
1896	P	P	1897-98	300	187	187	98*
1897	P	Y	1898-99	333	192	200	111
1898	Y	P	1899-00	337	187	174	117
1899	P	P	1900-01	329	199	220	130
1900	P	Y	1901-02	341	245	212	172

ball. Here again, if the whole period be considered together, Yale, which has been the most successful in the sports, has gained in the ten years a much smaller percentage than Princeton, so far as the College and Scientific School Freshman classes are concerned. In this table, however, the fluc-

\* Increase in requirements for admission.

tuations in the size of the Freshman classes correspond rather better with the fluctuations of victory and defeat than they do in the Harvard-Yale table. The figures for the scientific schools of Yale and Princeton cannot well be compared, because in 1894 the Sheffield Scientific School lost numbers temporarily on account of a distinct increase in its requirements for admission; and during the next three years the Princeton School of Science had a similar experience.

If the American colleges and universities could satisfy themselves that success in athletics is not indispensable to college growth, or better still, be persuaded that too much attention to athletic sports, or a bad tone in regard to them, hinders college growth, there would probably result a great improvement in the spirit in which intercollegiate contests are conducted: they would come to be regarded as the by-play they really are, and would be carried on in a sportsmanlike way as interesting and profitable amusements.

From incomplete but serviceable lists submitted to the Athletic Committee by the managers of the various athletic sports, it appears that tennis is the sport which still affords to the largest number of students the means of out-of-door exercise; 790 students were reported as playing tennis. The next most popular sport is rowing, 640 students having taken part in that sport. Football comes next with 242 players; and baseball fourth with 220. Track athletics engaged the attention of 146; and no other sport attracted so many as 100 persons.

The 640 men reported as rowing constitute the membership of the Weld and Newell Clubs. Probably every one of them took part in rowing during the year; and at least 250 rowed constantly during the seasons. There were 27 eight-oared crews on the water at one time. The new boat-house has proved very useful. In spite of its exposed situation, it is comfortable during the winter, and the in-door exercises on the rowing machines and in the tank can be carried on through the cold weather. The grading of various parts of the field has been continued, and it is the policy of the Athletic Committee, which has charge of the grounds, to drain and grade

the entire area in the course of time. The Athletic Committee is inclined to replace the wooden seats about the football field by seats built of iron covered with concrete. During the past four years \$33,000 has been saved from the gate money, and turned over to the Treasurer of the University as part of a sum to be devoted to improvements on Soldier's Field.

These facts about athletic sports and the work of the Athletic Committee are derived from the annual report made to the President by the Chairman of the Athletic Committee. It is probable that the whole of this report will hereafter be made a part of the President's annual Report.

The sickness reports for the year prepared by the Medical Visitor will be found in the Appendix (pp. 307, 308). The principal disorders are colds, indigestion, diseases of the eyes, the grippe, surgical injuries, tonsillitis, diarrhoea, headache, and diseases grouped as miscellaneous. The number of cases of appendicitis, 33, was more than double the number of cases of typhoid fever, 15. The months in which most sickness prevailed were November, January, and March. The smallest percentage of reported sickness occurred in the Law School; the next smallest in the Graduate School; and the next in the Divinity School. The College had the largest percentage of sickness, the younger students being apparently decidedly more liable to sickness than the older. The probability is that the older men do not so easily yield to or report slight disorders. The facts recall a remark which President Kirkland is said to have made to a malingering student, — "that sicknesses prevail within the precincts of the College in a greater proportion to the deaths than in any other place."

The amount of money spent in the year 1900-01 at Harvard University in aid of students, including all fellowships, scholarships, and beneficiary aid, was \$105,802.21, of which \$88,898.66 was spent in the Department of Arts and Sciences, — that is, in the Graduate School, College, and Scientific School. In spite of this heavy expenditure, it appears in the report of the Dean of the Graduate School (p. 141) that there were 323 applications for fellowships and scholarships to be held in the

current academic year, of which only 67 were successful. In the preceding year, out of 354 applications, only 76 were successful. Competition for these aids is, therefore, large enough to enable the selecting committee to exercise careful discrimination in the selection.

The Dean of Harvard College called attention in his report for the academic year 1898-99 to the need of more scholarships in Harvard College; and this year he again calls attention to this urgent need. He reports that in the three classes, Freshman, Sophomore, and Junior, between 70 and 75 men with grades which a few years ago would have insured recommendation for aid have failed to receive scholarships. He thinks it certain that the number of College students with very high rank has increased; and that it is a good deal harder to win a scholarship than it used to be. The attention of the Overseers is invited to the Dean's remarks on this subject (pp. 101-105).

The Dean of the Scientific School points out (p. 107) that the rapid increase in the number of points required at the entrance examinations has not yet caused any decline in the number of the first-year class. More than half of the intended addition to the entrance requirements has now been made,—that is, the number of required points has been already raised from fifteen in 1898 to twenty-one in 1901. Five points only remain to be added; but this last addition will, of course, tax severely the capacity of the smaller public high schools. Anticipating this difficulty, the Dean of the School points out that the Lawrence Scientific School has been engaged for several years in improving the class of students called "Special" students. Special students include, first, a limited number of persons of considerable maturity, who wish to engage in some particular study; and, secondly, a larger number of persons who come from schools where they could not obtain an adequate preparation. For the second class the School has instituted an examination in entrance subjects aggregating twelve points, including the required entrance Mathematics. A student who is thus admitted as a Special student is expected to make good his entrance conditions within two years, and to obtain regular standing. Besides passing at entrance the



examinations in subjects aggregating twelve points, he is required to present from the master of the school whence he came a written consent to his admission as a Special student. Many such persons have obtained a degree in the School in not more than five years, by obtaining satisfactory grades in advanced studies which are in continuation of elementary studies entering into the entrance examination, and by working through the greater part of two summer vacations.

By the middle of the current year, the students of the Lawrence Scientific School will be in the enjoyment of admirable new buildings for the Departments of Engineering, Geology, Architecture, and Mining. It is not only the buildings that are new: a large amount of new equipment has been placed in the new buildings. Teachers and students will have the great advantages of more space, more light, better ventilation, and better apparatus. The result should be a decided improvement in the work of the School. The Dean points out that the student in Harvard College who early in his course makes up his mind to enter a scientific profession may, within five years from his entrance to the College, obtain the degree of Bachelor of Arts and the degree of Bachelor of Science, and enter the novitiate of his scientific profession well equipped for professional duty. To accomplish this result, he should, however, know what his profession is to be by the end of his Freshman year in the College.

The report of the Dean of the Graduate School (p. 113) is unusually full and instructive. About one quarter of the resident students in 1900-01 were registered for less than full work; of these 76 persons, 17 were teachers in this University, 20 were teachers in neighboring schools and colleges, 3 were students in a neighboring institution, and of the remaining 22 a good proportion were men who had nearly completed the requirements for one of the higher degrees. This class of persons, therefore, — resident students doing less than full work, — is a very creditable one; and it is to be wished that a larger number of teachers in the schools and colleges of Eastern Massachusetts might avail themselves of the opportunities for advanced work offered by the Graduate School.

It is another interesting fact that less than 30 per cent. of the first-year students in 1900-01 entered the School immediately on receiving their first degree. The 70 per cent. had been carrying on graduate studies at other colleges or universities, or had been engaged in teaching. One hundred and thirty-nine persons, or about two fifths of the School, had already been graduate students elsewhere. The Dean gives a table which shows the migration of graduate students, and the fields of study of these migrating students (p. 127). In 1900-01, twenty-three colleges were represented in the School by members of their Faculties on leave of absence, and five secondary schools were similarly represented. This enumeration does not include the men doing partial work who were actively engaged each in the practice of his profession in or near Boston; neither does it include the seventeen members of the School who were serving Harvard University as Instructors, Teaching Fellows, or Assistants.

Nearly two thirds of the members of the School were born out of New England; but nearly one half claimed residence in New England, having immigrated from other parts of the country.

The average age at which the degree of Master of Arts and the degree of Doctor of Philosophy are taken continues to be deplorably high. A suitable age at which to take the degree of Doctor of Philosophy is twenty-five or twenty-six; the average age is now much nearer to thirty. The average age is raised by the fact that many candidates for these degrees teach for a time before becoming candidates.

The Faculty of Arts and Sciences has, thus far, been unwilling to require that the theses of the candidates for the degree of Doctor of Philosophy or of Doctor of Science should be printed. The enormous size of many of these theses has contributed to prevent the Faculty from adopting the rule which prevails in other universities. Many of these theses would make big books; and there are others which, though not large, would be expensive to produce in printed form, because of the elaborate plates which accompany them. Most of the writers of these voluminous or carefully illustrated theses would be quite unable to bear the expense of publication. It has

seemed to the President that theses of such magnitude should not be required, or even accepted, as Doctors' theses. They have seemed to him exaggerations of any work which it is reasonable to ask for as evidence of fitness for a degree which should be taken by twenty-five or twenty-six years of age, if not earlier. This view, however, does not commend itself to the several departments of the Faculty of Arts and Sciences which have charge of candidates for the higher degrees.

The Dean has remarked the increasing number of American universities which offer graduate instruction, and points out that the means of attracting graduate students to Harvard University need to be carefully studied. In the opinion of the President, the surest elements of this attraction will be found to be these: (1) liberty in study and a wide range of choice; (2) a rich library; (3) professors who are leading men in their respective departments of learning; (4) economical and wholesome conditions of life in respect to board and lodging, and pleasurable conditions as regards exercise; (5) a climate advantageous for study at all seasons of the year; (6) money aids, and opportunities for earning money while members of the School.

On the 10th of June, 1901, Professor Francis Greenwood Peabody was elected Dean of the Divinity School, — an office which, though free from any large amount of administrative detail, is nevertheless a responsible one, because of the wholly unprecedented quality of the Divinity School, in regard to organization, methods, and aims. Professor Peabody takes up his new duties with full and intimate knowledge of the changes made in the School during the past twenty years, and of the altered relations of the School to the Protestant ministry, and of the University to the religious world.

The figures given in the Dean's report for the Divinity School (p. 150) show the reduction in the number of students caused, in 1886-87, by the requirement of the degree A.B. for admission, and the still more striking reduction caused by increasing the tuition fee to \$150 in 1897-98. These shrinking effects have apparently been now overcome, for the Divinity School has enrolled during the current year 37 students, against 28 in each of the two years preceding.

The Summer School of Theology of 1901 was decidedly successful, having an enrolment of 89 persons, divided among nine denominations, more than two-thirds of the students belonging to Evangelical denominations. The entire session was devoted to the subject of the Christian Minister's Relation to Social Questions. Nine lecturers from Harvard University, and thirteen lecturers from other institutions took part in the instruction. Four excursions to various philanthropic institutions in the neighborhood were arranged for afternoons. The School very nearly paid its expenses, which was not the case in the year preceding. This summer course seems to have established its usefulness, and will be continued.

The vacancy caused by the death of Professor Everett was filled during the year by the election of William Wallace Fenn, A.B., Harv., 1884, S.T.B. and A.M., Harv., 1887. Mr. Fenn was at the time pastor of a Unitarian Church in Chicago; but he was also known to the authorities of the University and to the ministers of that denomination as a successful student of literature and theology. His election carried out "the understanding which was practically entered into with the subscribers to the new endowment in 1879, namely, that Unitarian doctrines would always be entitled to respectful exposition in the school, and that to properly expound these doctrines at least two professors would always be needed, one of whom should be a professor of theology." (President's Report for 1883-84, p. 33). The entire endowment of the School has been provided by Unitarians; but the constitution of the School prescribes "that no assent to the peculiarities of any denomination of Christians shall be required of either instructors or students."

No progress was made during the year towards a satisfactory solution of the problems concerning the enlargement of Austin Hall. For a school of 650 students, the present building is inadequate as regards the number of lecture-rooms and the number of desks in the reading-room. Moreover, the School has been enlarging its library at a rapid rate; and by the end of the current year, the shelving in the present building will be filled. As there is no reason why the School should not

spend \$12,000 a year on books, and as books are the sole apparatus required by a law school, the expediency of providing immediately more shelving on which to place the accessions is obvious. The chief distinction of the Harvard Law School — after its professors — is its admirable library.

The Faculty of the Law School is in favor of limiting the instruction given in that School to law determined by courts. They therefore would not admit to the School such studies as institutional history, government, political science, and administration national, state, municipal, or colonial. The demand for instruction in these subjects at universities is manifestly increasing; but since the Law School is indisposed to take them up, they will have to be developed in the Graduate School.

The entering class of the Medical School numbered 196, — a larger number than usual, because it was the last year that one could enter the School without possessing a degree in Arts or Science. It was not, as a whole, a well-prepared class: at the end of the year only 100 passed all the examinations successfully, and 15 failed to pass in any.

The experimental rearrangement of the studies of the first and second years in the Medical School, whereby the time devoted to each subject was reduced to half a year, the number of weekly hours devoted to each subject being much increased, has now been in operation for two whole years, the class which entered in 1899 having completed the second year of the course on this system last June. The new plan has, in the opinion of the professors, been successful in all subjects, with the single exception of the second-year work in Anatomy: it is the opinion of the Department of Anatomy that two months partially devoted to Anatomy in the second term of the second year, after a complete intermission of that study for a whole year, are not sufficient. The experiment will not be complete, however, until a class which began its studies in the Medical School on this system has graduated. Then, the clinical teachers of the third and fourth years will be able to testify whether the men trained in the new method during the first two years are the equals or the superiors of the men who were

trained in the old method. The object of the School being to train trustworthy practitioners, the methods of instruction are finally to be tested by the effective knowledge and skill of the graduates in practice.

At Commencement there was announced a great gift to the Medical School from Mr. J. Pierpont Morgan. He declared his intention of erecting three large structures for the occupation of the Medical Department. The cost of these three buildings, including the preparation of their site, was estimated at more than a million of dollars.

The examinations for the degree of the Dental School are strictly conducted, as is evident by the large percentage of failures. In June last 46 students applied for the degree, of whom 17 failed to pass the examinations. The clinical opportunities of the students determine a very important part of the instruction of any dental school. That the opportunities are large in the Harvard Dental School may be seen in the record of the work done in the Infirmary and the different clinics. In the Infirmary, more than 7,000 patients were treated in 1900-01, on whom 21,557 operations were performed; in the mechanical department, 358 sets of artificial teeth were supplied to patients; and 97 sets were repaired; 114 cases of irregularity were treated and corrected; and 107 crowns and caps were supplied. The Infirmary also dealt with 48 cases of fractured jaws, 7 cases of cleft palate, and 3 cases of hare-lip. All these various operations are so many means of instruction for the students of the School. They perform, under vigilant direction, the operations of the Infirmary, and make the mechanical appliances. It is the opinion of the Dental professors that the School can now bear a substantial increase of the requirements for admission.

The expenses of the School of Veterinary Medicine for 1900-01 exceeded its receipts by \$8,456.45; and this deficit had to be paid out of the general treasury of the University. In November, 1900, the Corporation, having given up all hope of procuring an adequate endowment for the School and Hospital, took the necessary steps to stop this drain on the general treasury. They voted to discontinue the free clinic

within a few weeks, to close the Veterinary Hospital on June 1st, 1901, to receive no more students of veterinary medicine, and to accept no more annual subscriptions to the Veterinary Hospital; they also gave notice to the two full professors of the Department that their salaries would not be continued after September 1st, 1901. The third-year class graduated in June, 1901; and the Corporation provided for the second-year and first-year students by agreeing to pay their tuition fees in the veterinary department of the University of Pennsylvania for one and two years respectively. In view of the fact that Professor Charles P. Lyman had labored earnestly in the School for nineteen years, the Corporation admitted him, by exception, to a part of the benefits of the retiring allowance system.

The University has never before been compelled to abandon a department of instruction once adopted by it. The fact seems to be that small domestic animals, like dogs, cats, and birds, engage the affection of their owners to such a degree that money will be spent freely to save their lives, or relieve their sufferings; but the larger animals, like cattle and horses, do not so much enlist affection, so that their moderate money value and the uncertainty of their restoration to usefulness are allowed to limit the expenditure upon them when disabled.

In spite of the closing of the Veterinary School and Hospital, the University has not forgotten that all the great advances in human medicine during the last fifteen years have come through the study of comparative medicine, or, in other words, through the discovery of the effects on the human body of the access to it of other members of the animal kingdom, or of preparations derived from the bodies of other animals.

The Bussey Institution had a good year in 1900-01, for thirty-four students were in attendance during the year, among them five students of landscape architecture in the Lawrence Scientific School, who were aiming at the degree of Bachelor of Science, but sought instruction in agriculture and horticulture at the Bussey Institution.

New green-houses and a new head-house were erected for the Horticultural Department, and were a great improvement

on the old ones. Two new rooms were also finished in the attic story of the Stone Building for the better accommodation of classes in natural history and engineering. The Dean mentions (p. 191) that a detached building for the Library would be a desirable addition to the present accommodations of the School.

The situation of the College Library in Gore Hall becomes more and more difficult, as the recent reports of the Librarian have clearly shown (p. 192). The following table of expenditures in the Library for each of the three years past shows that the money spent in the purchase of books has been, in those years, only from 26% to 37% of the total expenditures for the Library. Much more than half of the annual expenditures are for salaries, wages, light, heat, cleaning, repairs, and the incidental costs of accommodating and assisting the hundreds of readers who daily resort to the Library between nine in the morning and ten at night.

EXPENDITURES OF THE LIBRARY.

	1898-99.	1899-1900.	1900-01.
For books . . . . .	\$15,815.68	\$25,502.38	\$25,121.97
For salaries and wages . . . . .	33,538.45	33,886.62	32,959.27
For light, heat, printing, cleaning, binding, and sundries . . . . .	11,156.06	10,808.85	9,566.62
	\$60,510.19	\$70,197.85	\$67,647.86

A library for teachers and students is necessarily managed on different principles from those which apply in a library for the general public. For its successful administration, it needs a larger proportion of high salaries, and more expenditure for advice and help to readers; because it tries to serve a large number of learned men—teachers and others—who are working at or beyond the confines of knowledge, and a much larger number of advanced students in many languages and many departments. It is always trying, also, to collect and arrange special materials in recondite subjects.

With the present income for the purchase of books, about 16,000 volumes a year can, on the average, be added to the Library.

ANNUAL INCREASE OF VOLUMES (EXCLUDING PAMPHLETS).

	1898-99.	1899-1900.	1900-01.
College Library (Gore Hall only) . . . . .	15,174	19,721	13,797



If the income of the Library available for the purchase of books remains what it is now, the number of volumes in Gore Hall will double in twenty-four years. But, as all experience proves that the money annually available for the purchase of books will increase, the Corporation have to contemplate the doubling of the Library in less than that time. In the past twenty-four years, that is, since the year 1876-77 (the year in which the fire-proof addition on the east side of Gore Hall was completed), the number of volumes in the collection has rather more than doubled, and the expenditures of the Library have much more than doubled.

## EXPENDITURES OF THE LIBRARY IN 1876-77.

For books . . . . .	\$11,433.46
For salaries and wages . . . . .	14,571.40
For heat, printing, cleaning, binding, and sundries (no light)	2,621.58
	<hr/>
	\$28,626.44

As the Librarian has repeatedly pointed out, there is no room for more books in Gore Hall, and by the lack of space in the working-rooms the labors of the staff are hindered, and made less productive than they might be. In order to accommodate readers, it has been necessary to move thousands of books into buildings which are not fire-proof, and to maintain in those buildings auxiliary reading-rooms. These scattered libraries now contain 29,880 volumes (p. 200). Moreover, there are no rooms in Gore Hall where teachers can meet classes for lectures or conferences which need to be illustrated by many books drawn from the Library.

These serious embarrassments would be remedied for ten or fifteen years by erecting a building in contact with the present structure large enough to contain a reading-room with three hundred desks, a catalogue-room, a delivery-room, and four conference rooms. The upper half of old Gore Hall could then be converted into a stack in full execution of the plans adopted in 1895. The present delivery-room and the room over it could then be assigned to the Library staff. Towards completing the stack in Gore Hall, the Corporation holds the Gore Fund of \$20,571.18. The construction of a new reading-room is wholly beyond the resources of the Corporation; it

must wait for a single giver, or for a combination of graduates and friends of the University who realize that next to the daily instruction given by living teachers, books are the most indispensable provision at a seat of learning.

The increasing rate at which large collections of books grow suggests strongly that some new policy is needed concerning the storage of these immense masses of printed matter. The University teachers in Arts and Science, asked to indicate every year the books which in their judgment should be freely accessible to students in their several departments of instruction, are content to have about 55,000 volumes accessible without restriction to the direct handling of their students (p. 203). This number includes the books which are in the reading-room of Gore Hall, those in the various special libraries and laboratories, and about 2,500 in the Harvard Union. These freely accessible books may be called the contemporary working-library for Arts and Science, or the total number of books which 2,500 students, distributed among about 360 courses of instruction, may be expected to utilize (p. 205). Again, 63,673 books were borrowed from the College Library during the year 1900-01. It may safely be inferred from these figures that there is already a large mass of unused, or very little used, books in the Gore Hall collection of 367,000 volumes.

It may be doubted whether it be wise for a university to undertake to store books by the million, when only a small proportion of the material stored can be in active use. Now that travel and the sending of books to all parts of the country have become safe and cheap, it may well be that great accumulations of printed matter will be held accessible at only three or four points in the country, the great majority of libraries contenting themselves with keeping on hand the books that are in contemporary use, giving a very liberal construction to the term "contemporary." If the Congressional Library, the combined libraries in New York City, and the combined libraries in Chicago would undertake to store any and all books, making them accessible to scholars in every part of the country, the function of the thousands of other libraries in the United States might safely be considerably simplified.

In every well conducted library, the stamped date, put inside of each book when it is lent, supplies, in the course of years, the needed information as to whether the book is, for present use, dead or alive. An examination of the books once in five or ten years might divide the unused from the used. The unused might be stored in a much more compact manner than they are now, even in the best-arranged stacks. The card catalogue of a great library might also be divided into two distinct parts, — the catalogue of the dead and the catalogue of the living books. When a card catalogue numbers millions of cards, its daily use is greatly obstructed by the mere multitude of its cards, and much time is wasted in handling it, both by readers and the library staff. Such a division of the books in a library is repulsive to librarians, and to many learned men who like to think that all the books on their respective subjects, good, bad and indifferent, alive and dead, are assembled in one place. In a university, however, the main object of a library must always be to teach the rising generation of scholars. Whatever injures a library for the use of learning's new recruits should be avoided, but without making it impossible for the library to serve also the needs of veteran scholars.

The report of the Librarian, taken in connection with the Treasurer's statement concerning the Library (pp. 72-74), makes very evident the costliness of the various operations which must be performed between the first indication that a certain book is desired at the Library and the placing of the book upon its shelves. The cost of these various operations not infrequently exceeds the cost of the book; and it is probable that, on the average, it is not less than one dollar a volume. To reduce this cost is a great object in all libraries. One of the most expensive items is the cataloguing. The operation of cataloguing has been considerably simplified at the Library during the past twenty-five years; but much remains to be done in the direction of simplification and economy. The coöperative printing of titles is a very promising new method. As soon as it was well determined that a printed card was better than a written card, it became obvious that the printing ought to be done at one place for many libraries. The service

lately offered by the Congressional Library (p. 216) is a very valuable aid to all libraries; and it is an aid which the Government may with great appropriateness provide for the general benefit of the whole country.

It is now forty years since Ezra Abbot, Assistant Librarian at Harvard University, began a new alphabetical catalogue of the College Library, made on cards five inches long and two inches wide, arranged in drawers. In order that the cards should be conveniently handled and read in these drawers, two sloping wooden blocks were devised by Mr. Abbot, — one fixed in the front of the drawer, the other movable and placed behind the cards. The slopes of these blocks were important, and each block was the subject of much study. For movable divisions between the cards in one drawer, other wooden blocks about an eighth of an inch thick, and of the same length as the cards, but a little higher, and with bevelled tops, were devised, and so disposed that when placed among the cards, as these stood in their normal position leaning against the block behind them, the bevelled edge of the dividing block or guide-board presented to the eye a level surface. On the bevelled edge were written or printed the two or three letters which defined the alphabetic position of the adjoining cards. The two sloping blocks and the thin guide-boards were indispensable parts of the card catalogue. Mr. Abbot also contrived appropriate means of labelling each drawer on its front, by means of movable cards held by metallic cleats, and of preventing the cards in the drawer from being lifted out, when such prevention was desirable. For the latter purpose he ran a removable wire through all the cards in a drawer, the hole in the cards being so much larger than the wire that the cards could be freely sloped either way in the drawer. These inventions Mr. Abbot made for the sake of furnishing to all users of the Harvard Library a catalogue arranged by subject, — a form of catalogue particularly useful to students who are not well acquainted with the bibliography of their several subjects. It was Mr. Abbot's fundamental object to enable any person to find with facility all the works in the Library that related to the subject he was inquiring into. Mr. Abbot's card catalogue methods were, however, equally

applicable to an alphabetical catalogue of authors, buyers, sellers, patients, clients, or other groups of persons.

The inventions thus made by Mr. Abbot have now been utilized in business. The card catalogue constructed on Mr. Abbot's principles is now found in every large commercial establishment, in every physician's office, in every private library of considerable extent, and, indeed, is now used in the United States wherever an alphabetical list is to be kept up to date, and is to be frequently referred to for ready information. Many business firms, and educational and charitable corporations now keep their ledgers in the form of a card catalogue. In the card catalogues now in business use, the elements of Mr. Abbot's construction will all be found. An indispensable tool in modern industries, trades, and professions, was provided forty years ago by a man of learning who had no business object whatever in view.

The botanical departments of the University — under which title may be included the Botanic Garden, the Gray Herbarium, the Botanical Museum, and the Arnold Arboretum — all have constant friends and supporters. No one of them is adequately endowed; but the work of all four is prosecuted with diligence; and when the income of the inadequate endowments proves insufficient, contributions of friends fill the annual gaps. Moreover, in each of these branches of the total botanical department, the permanent endowments have been substantially increased in recent years. The most important addition of the year 1900-01 is that of \$95,970 to the endowment fund of the Arboretum. The Director takes a legitimate satisfaction in the fact that these gifts for the endowment of the Arboretum have not come entirely from persons living in Massachusetts, a substantial portion having been contributed by persons living in other parts of the United States.

Last summer the Prussian government offered Assistant Professor Theodore W. Richards a full professorship of chemistry in the University of Göttingen, and described the professorship as offering ample opportunities for chemical research. Dr. Richards was an Assistant in Chemistry at Harvard from

1889 to 1891, Instructor from 1891 to 1894, and Assistant Professor from 1894. He had, therefore, been twelve years in the service of the University, and he had in that interval published a series of chemical investigations of unusual merit. Indeed, it was these publications which attracted the attention of the Prussian government. The desire of the Corporation to retain the services of Professor Richards caused them to consider the conditions under which it was reasonable to expect professors engaged in instruction to be also successful original investigators. To determine the just relation between instruction and research is one of the most difficult of modern university problems. It is clear that a man of letters or science, whose time is to be chiefly given to private study, and who is supported on an endowment, must have contact with advanced students of his subject, else he will have no competent assistants in his researches, and will bring up no body of disciples. He should also be required to give stated lectures, or prepare stated reports, or perform other duties which will give public evidence that he is hard at work on his subject, and is producing results which can be imparted to advanced students, to an Academy, or to other competent audience. It is all important to such a man that he should have the opportunity to attract and train a series of advanced students who will catch his spirit, and carry on his work long after his personal teaching has ceased. To provide a laboratory, or a library, or a salary derived from endowments, is not the whole of proper university action aimed at the production of competent investigators. The university service for such men must be wisely planned, and those plans must be executed with far-seeing skill. The endowment of research is becoming an attractive object for private benevolence; but the world has little experience of wise schemes for this purpose. The Corporation endeavored to make with Professor Richards an arrangement of his work which will leave him a teacher, and yet give him time and facilities for chemical research, and for creating a school of chemical investigators. After due consideration of the attractive proposal of the Prussian government Professor Richards decided to remain at Harvard University. It is a pleasant feature of this unique negotiation that it holds out a hope that

America may before long begin to repay to Germany some of the immense educational benefits which the German universities have conferred on the American.

It is clear that men of means, who reflect on the uses and results of educational endowments, are more and more inclining to endow research. Mr. T. Jefferson Coolidge, to whom the University is indebted for the Jefferson Physical Laboratory, and for many other large gifts, in September last sent to the President and Fellows a gift which yields an income of \$2,500 a year, to be used "primarily for laboratory expenses of original investigations by members of the Laboratory [Jefferson] staff: but the Director at his discretion may award therefrom an honorarium of not more than \$500 per annum for the private use of any person who (although receiving no salary from the University) may wish to carry on original investigations under his direction at the Jefferson Physical Laboratory. The results of such investigations shall appertain to the Laboratory, and when made public, the name of the laboratory and of the investigator shall accompany the publication; but no publication shall be made without the approval of the Director. The balance of this income is to be used only for meeting the legitimate expenses of original research, whether by professors or by students." Mr. Coolidge further provided that no part of this income should be paid for regular permanent salaries, or for routine expenses, his desire being to make an additional provision for physical research by paying the salaries of assistants exclusively devoted to such research. It is obvious that this is an intelligent experiment in the endowment of research; for it attempts to put skilled labor at the disposition of the learned professors who are giving their lives to the subject of physics, in the hope to make their learning more productive than it could be without such assistants.

It is also to be noticed that in endowing professorships, recent givers have more than once specified that they desired the professors on their endowments to have leisure enough to contribute to the advancement of learning in their several departments. The Gurney Fund has an express condition of this sort; and the gift of the Henry Lee Professorship Fund

was accompanied by the expression of a similar wish with regard to the incumbent of that professorship.\*

The Director of the Physical Laboratory directs attention (p. 237) to the fact that the subject of Physics has undergone very great changes during the past twenty-five years. The present generation has conceived the waves of light and heat as electro-magnetic waves, and is thus connecting in intimate relationship phenomena which its predecessors treated as separate manifestations. He also observes that within the past few years the subject of Physical Chemistry has become of transcendent importance.

The Jefferson Physical Laboratory has trained a thorough small body of young men, all of whom are capable of making the most accurate sort of independent physical investigations. The names of eight such young men occur in the Direct report for 1900-01. As a rule, the four regular assistants in the Laboratory engage in independent investigation or cooperate with the professors in their researches. It is the purpose of the recent gift of Mr. T. Jefferson Coolidge already mentioned to add to the present body of assistants and advanced students in the Laboratory four or five assistants exclusively devoted to physical investigation.

The Division of Philosophy formulated in the spring of 1901 their desires for a new building to be devoted wholly to the work of the Division, and expressed their wishes in hopes in a printed circular which was reprinted in the July number of the Harvard Graduates' Magazine. Sketches drawn to scale were prepared to show the desired areas of the several floors, and the division of these areas into rooms. The Division also expressed their hope that the building might bear the name of Ralph Waldo Emerson. This plan is now to be drawn out with all necessary details by an architect so that any intending benefactor, or group of benefactors can see precisely what the Division of Philosophy think would be suitable accommodation for the varied and growing work.

\* "It is my wish that the person chosen to hold such professorship may have his duties as instructor made sufficiently moderate in amount to give him leisure to study and think and write and otherwise become a master and a leader in his subject."



of the Division. A site for the building has also been selected, — namely, the ground south of Sever Hall corresponding to the site of Nelson Robinson Jr. Hall north of Sever Hall. The Psychological Laboratory would occupy the whole of the third story of the proposed building; and for this laboratory quiet is peculiarly desirable. A building placed about in the middle of the Quincy Street side of the Yard will be as far removed as possible from the highways which go towards Boston, and from the electric cars. It is very much to be wished that the hopes of the Division of Philosophy may be promptly fulfilled.

The Harvard Observatory possesses a collection of photographs on glass, each individual plate of which has the peculiar value that attaches to any useful object which could not be replaced if destroyed. The plates contain a large amount of information, acquired at known dates, which could not be obtained elsewhere. The entire collection is treated like a library, as regards catalogues, cross-references in the catalogues, and methods of consultation. It affords a complete history of the stellar universe for the past twelve years; and of this history no other copy exists. If all the photographic plates at the other observatories of the world were brought together in one building, they would amount to but a small portion of the material stored at the Harvard Observatory. Facts from this photographic library are desired by, and are furnished to, astronomers in all parts of the world. For example, photographs taken in 1894 and 1896 of the remarkable planet Eros were greatly needed by astronomers after its discovery in 1898; the Harvard collection furnished 23, while not a single photograph was elsewhere to be found. The kind of use made of these photographs may be illustrated by the following statement: — After the recent discovery in Moscow, that a certain known star was a variable, a single week's examination of the plates in the Harvard collection yielded 20 observations of that star, extending over a period of twelve years and confirming the discovery of its variability.

This collection increases constantly, so that the brick building which contains it has now become wholly inadequate for

the proper storing and handling of the plates. A simple building of adequate size could be erected for \$50,000; and for such a building there is an excellent site close to the Observatory. The present building could then be converted to the use of the valuable library of the Observatory, which is now distributed through various rooms in a wooden building. An additional endowment of \$50,000 would greatly increase the usefulness of the photographic collection; because from the income of such a fund assistants could be paid who could constantly search the collection for the past history of new objects, or of other objects interesting though not newly discovered. In providing such an endowment, the giver would run no risk about the productiveness of his gift: he would protect from destruction and increase the usefulness of a collection which is already proved to be of the highest value to astronomical science.

In the Museum of Comparative Zoölogy important improvements were made during the year in the arrangement of the Library. Many volumes relating to Ethnology were transferred to the Peabody Museum, and nearly as many Botanical works to the Gray Herbarium and the other special libraries of Botany. Many duplicates have also been transferred to the general library of the University. On the other hand, by a vote of the Council of the University Library, more than 500 geological volumes and pamphlets were transferred from Gore Hall to the Library of the Museum. The object of these transfers is to make the Museum Library strictly a library for Geology and Zoölogy, and in these subjects to make it very complete.

After a lapse of some years the Department of Geology has begun again to take part in the publications of the Museum, three papers by officers and students in the Department of Geology being published in the Bulletin during the year under review.

The Director Emeritus of the Museum, accompanied by the Keeper of the Museum, has gone during the present winter to the Indian Ocean to continue there his study of coral formations, the islands of that ocean being the only groups of atolls in the world which Mr. Agassiz has not examined.

The Director of the Zoölogical Laboratory gives in his report (p. 257) a table of the attendance at each one of ten courses of instruction in Zoölogy which were given during the year, the number of Harvard students attending each course, and the number of Radcliffe students attending each of six courses being separately stated. It should be understood that the six courses in which Radcliffe students are enumerated are repeated especially for Radcliffe College. The Laboratory always contains a fair number of advanced students engaged in Zoölogical researches. The number of persons who took part in preparing the published Contributions from the Laboratory for the academic year 1900-01 is eleven, of whom one was a woman. All three of the Doctors of Philosophy recommended by this department in June, 1901, have positions as teachers of Biology: one in Columbia University, one in Yale University, and one in the Chicago University Academy.

The Chairman of the Department of Geology and Geography mentions in his report (p. 262) the interesting fact that of 46 successful applicants at the United States Civil Service examination for the position of Assistant Geologist on the United States Geological Survey, held April 23-24, 1901, 14 had received academic or graduate instruction at Harvard. This fact may be accepted as evidence that the instruction given in this department is intelligently directed to fit young men for actual service in geological fields.

The Fund for the Encouragement of Mexican and Central American Research, which is maintained by the annual contributions of a few persons (fourteen in 1900-01) interested in this subject, has enabled the Museum to carry on researches in various parts of Yucatan and Central America for several years. During the year under review three parties under competent direction were kept in the field, and valuable discoveries were made by each of the three parties. The same subscription has furnished means for publishing a series of illustrated quarto memoirs, and Mrs. Nuttall's work on "The Fundamental Principles of Old and New World Civilization." Under the auspices of the Museum, researches were also prosecuted in New Mexico, in California, and Mississippi.

It is highly desirable that the Museum should be extended to the west to make connection with the southwestern corner-piece of the University Museum. This is the only gap which remains to be filled to secure the completion of the entire plan laid out by Professor Louis Agassiz more than forty years ago. The Peabody Museum needs the additional room which this building would provide; and, moreover, it needs a large addition to its permanent funds.

On account of the new relations of the United States to tropical and semi-tropical islands and peoples, it is desirable that the anthropological instruction given at the University should be enlarged, along with the instruction in economic botany, government, and administration.

In the absence of the Curator of the Semitic Museum work on the new building for the Museum has not been pressed forward. It is expected that the building will be finished, and the cases made ready, before the return of the Curator in the early summer of 1902. In the meantime, the Curator is buying valuable objects for the Museum during his present travels in Europe and Syria. The Curator, writing from Rome, urges (p. 275) that Harvard University be provided for a term of years with at least \$10,000 a year with which to undertake Egyptian or Assyrian exploration on its own account, and cites the example of the University of California, which is now employing in the field two Harvard graduates. The University of Pennsylvania has had great success in Babylonia-Assyria, and a Babylonian expedition has just been organized in the interests of the Smithsonian Institution with a Harvard graduate as leader. The Curator also points out that Palestine as a field for exploration has been comparatively neglected. He urges that Harvard University, beside sending out its learned men to do good service in these fields for other institutions, should enrich its own stores.

In 1900-01 the Fogg Art Museum received by gift or for deposit several original works of high merit, partly sculpture, partly paintings. By purchase the Museum acquired during the year a few electrotype reproductions, 858 photo-

graphs, and 266 slides. The cataloguing of photographs and slides has kept pace with the accessions.

In his previous report the Director suggested that the second story of the Museum should be raised, in order to get space and light for the proper exhibition of pictures. He would now prefer a suitable gallery for pictures near the present building and connected with it by a short passageway, and having a western entrance which would give the Department of Architecture convenient access to the collections of the Museum.

The Mineralogical Collection remains nearly stationary, there being no money with which to buy minerals, and the number of gifts received being small. This is one of the oldest collections in the possession of the University, and one which was much enlarged and improved during the administration of Professor J. P. Cooke, and especially between 1850 and 1880. The collection is now far better lodged than ever before; but, from lack of money, the Corporation have been obliged to allow many opportunities to enrich it to pass unimproved.

The number of students in Radcliffe College increases slowly, but with reasonable steadiness. In 1901, 116 candidates were admitted as Freshmen, against 93 in 1900. Sixty-one Graduate students registered during the year, 47 of whom were from other colleges. It is astonishing how much good work has been done by Radcliffe College with its slender material resources. Now that its future, as regards its grounds, has been decided, it may hope to receive two kinds of much needed gifts, — additional buildings, and additional endowment. Whoever makes a gift to Radcliffe College can feel assured that the return on his gift will be prompt and large; because he will give to an institution which enjoys without payment many of the acquired facilities of Harvard University and much of its prestige.

The first of the Radcliffe dormitories has now been completed and occupied; and its entire success should lead to the erection of several more of the same type. With registered students to the number of 457, in 1900-01, Radcliffe College should certainly have dormitories for the accommodation of at least 150 students.

From the fund collected by the University in 1900 for the instruction and maintenance of Cuban teachers, there remained for use during the summer of 1901 the sum of \$2,331. The most appropriate use of this money was the further instruction of some small body of Cuban teachers. Accordingly, Mr. Edward Morales, who was the Secretary of the first Cuban expedition, conducted from Cuba a body of nearly 80 teachers, who were to receive at Cambridge instruction in English in several grades. It was understood that so far as possible the selection should be made from teachers under thirty years of age, and from those who already had some acquaintance with English. On their arrival in Cambridge, six graded sections were arranged, — three for men and three for women, there being 24 men and 53 women. The classes met from 8.30 to 9.30 and from 10.30 to 11.30 every day except Sunday; and frequent compositions in English were required of them. Moreover, study hours were arranged from 1 until 3 every afternoon, during which time one of the teachers was present to assist the Cubans in the preparation of their lessons. The attendance at the morning classes, and also at the study hours, was all that could be desired. At the end of six weeks, written examinations were held, at which several members of the different sections attained the equivalent of 90 to 95 per cent. A certificate was given to every member of these classes which stated for each person the grade of the class attended, the degree of punctuality in attendance, and the mark at the examination. The object of the course was to bring about for every student a distinct improvement in both spoken and written English; and this object was in good measure attained. The names of the teachers of the Cuban classes will be found in the Appendix, page 313.

The expedition differed from that of the preceding summer in several respects. It was small, and easily manageable, and consisted of persons who themselves paid a considerable portion of their expenses. They also devoted themselves wholly to the study of one subject while in Cambridge, just as students in the regular Summer School for Americans devote themselves to one subject, as a rule. Except that they needed a kind of instruction in English which Americans do not need, the

members of this second expedition might very properly have been members of the regular Summer School.

The small balance of the original Cuban fund which still remains in the hands of the Bursar will be used during the current year in aid of a few persons who were connected with the expedition of 1900, and desired to pursue their studies at the University.

The summer course in physical training has been very useful in preparing instructors for a great variety of other institutions. The Director of the Hemenway Gymnasium, Dr. D. A. Sargent, has not only maintained a summer course of instruction in physical training ever since the summer of 1887, but, by his numerous inventions of gymnastic apparatus and by his contributions to anthropological science, has been influential in building up all over the country schools, or departments, of physical training, and in providing them with good apparatus and competent instructors. The directors of the departments of physical training in a large number of colleges, universities, and school systems scattered all over the United States have received a valuable part of their training from Dr. Sargent's summer school. Among his students have also been several persons who have been instrumental in introducing the present methods of gymnastic instruction into the Young Men's Christian Associations of the United States. This is a strong case of the diffusion over an immense area of one teacher's ideas and methods through the labors of a large body of capable disciples.

Great improvements were made during the summer of 1901 in Memorial Hall. The debt of the Dining Hall Association to the College having been reduced, by a series of annual payments for the reduction of the principal, to \$12,522.66, the Association felt able to borrow some more money from the general treasury. The Directors of the Association having applied to the Corporation for leave to introduce a cold storage plant and an electrical lighting plant, and also for leave to rearrange the screen and the tables on the floor of the Hall, the Corporation requested the Association to replace at the same time all the wooden partitions in the basement, and the

wooden floor of the Hall itself, by brick partitions and a fire-proof floor. This the Association undertook to do; and by Christmas, 1901, these improvements were effected. As heretofore, the Association pays interest on the advances made by the Corporation, and an annual sum towards the extinction of the debt. The term-time use of the Hall by the Association was not interrupted, and the improvements in the plant fully realize the expectations of the Directors. The new security against fire is not only a relief from anxiety lest the Hall be injured or destroyed, but a relief also from fear lest the students should be deprived of the use of the Hall during term-time. To lose the use of either Memorial Hall or Randall Hall during term-time would be a very serious crippling of the Cambridge departments of the University.

At the close of the year under review, it was announced to the public that the University is indebted to Mr. and Mrs. Nelson Robinson, of New York, for the gift of the new building on Quincy Street for the Department of Architecture; and that this building is erected in memory of their son, Nelson Robinson, Jr., who was a member of the Class of 1900. This building has been built from plans of Messrs. McKim, Mead & White in the most thorough manner possible, and has been furnished throughout, and provided with a large number of casts, prints, and photographs, by Mr. and Mrs. Robinson. They also gave, in February last, a permanent endowment fund of \$300,000, the income of which is to be used, first, to carry on the building in a thoroughly satisfactory manner with adequate service and assistance, and secondly, to keep its equipment in first-class condition, and to improve it year by year. \$4,000 of the yearly income is to be added to the principal, to provide against increasing expenses and the possible decreasing rate of interest on the fund. The income is next to provide one, two, or more travelling fellowships. Since a permanent provision is made for a yearly addition to the principal, Mr. and Mrs. Robinson further mention five other uses to which the income of this fund may be applied, all of them connected with the Department of Architecture, except the last, which is Retiring Allowances. These dispositions make



it certain that the new hall and its contents will be made permanently useful without expense to the Corporation, and will be maintained in the highest state of efficiency. All imaginable adverse chances are provided against as completely as thoughtful foresight can contrive. The Department of Architecture will enter upon the use of these great gifts with the opening of the calendar year 1902.

The Harvard Union, the great gift of Henry Lee Higginson, was opened a few days before the beginning of the current academic year. Its success has been immediate and decided, except that a few hundred more undergraduate members are still desirable, in order to make sure that its income will meet its expenditures. Many good uses have already been found for the building; and the experience of a single year is likely to solve all the problems which have arisen concerning its management, and to answer satisfactorily all surviving doubts as to its utility, if any there be. Since the Union has hundreds of members who are not connected with the University, the building with the ground on which it stands is taxable by the city. The Union also pays a moderate ground rent to the University. It therefore brings no burden whatever on the University treasury.

During the year 1900-01, an extraordinary number of buildings were under construction for the University, — namely, the Nelson Robinson Jr. Hall for Architecture, the Semitic Museum, the southwestern corner of the University Museum, the Simpkins Laboratory which makes part of the Rotch Building, Pierce Hall, and the Stillman Infirmary. In addition, the Harvard Union was being erected. These buildings, with their furniture and fittings, will cost at least \$850,000. Only the Harvard Union can be said to be finished at this date (Jan. 7, 1902); but it is expected that all of them will shortly be occupied. Robinson Hall is well endowed by its givers; the Harvard Union is not to be conducted at the expense of the University; and for the support of the Stillman Infirmary, a few small gifts have been already received. But there remain four buildings, which together cost about \$450,000, for the running expenses of which no provision has been made.

It is obvious that a heavy new charge is to be brought upon the Corporation during the coming year. Since the number of students in the Department of Arts and Sciences has increased only by four persons, and the endowments applicable in this department cannot be expected to yield a higher rate of interest than they yielded in the year 1900-01, it is obvious that possession of these admirable new buildings is not without its embarrassments.

The President was given leave of absence for five months of the year 1900-01, from November 21 to April 21; and during his absence the Senior Fellow of the Corporation, Henry Pickering Walcott, M.D., was appointed Acting President. Dr. Walcott attended the meetings of all the Faculties, and the meetings of the Board of Overseers. Having received \$2,500 for this service, he returned the money to the Corporation to establish a fund, "the income of which shall be used for the purpose of assisting such sick students of the University as may be admitted to the Stillman Infirmary for treatment, and are not able to meet its necessary charges." It has been supposed by some friends of the University that the administrative department was but ill-organized and under-manned. The Corporation, therefore, observed with satisfaction that the entire machinery of the University ran smoothly without interruption during the five months' absence of the President. The fact is that the growth of the administrative department of the University has kept pace with the increase in the number of teachers and students, and that a proper system of divided responsibilities, with authority to match responsibility, exists throughout the University. This development of the administration has been indispensable; because much greater administrative attention is now given to the individual student than was given twenty years ago, or forty years ago, when the number of students was much smaller. With the present administrative force, the number of students in the University can grow far beyond its present limits without requiring additions to the administrative staff, except in its lower grades.

In May, 1901, the Corporation received from the Board of Overseers the following vote: "That, in the opinion of this Board, it is expedient to create the office of permanent Secretary to the President; that the salary of the office shall be sufficient to secure a competent and permanent officer; that he shall have the power in the name of the President to do such acts as the President shall request, and to discharge such duties as the President shall delegate to him." The object of the Board of Overseers was to relieve the President of some of his present functions, and to place in his office a young man who should learn the routine of the office and its general methods, and thus be able to transmit to a successor the detailed administrative arrangements which the present incumbent has gradually learned or introduced in the course of the last thirty-two years. The Corporation adopted the advice of the Overseers; and on the first of August, 1901, Mr. Jerome Davis Greene, A.B. (Harv.) 1896, was appointed Secretary to the President. An experience of five months has satisfied the President that the action of the Board of Overseers was wise, and that the purposes of the Board can be well fulfilled.

Early in January, 1901, the Corporation and Board of Overseers appointed a Joint Committee to prepare and present to the General Court a bill to provide for enlargement of the suffrage for Overseers, which is now restricted to Bachelors and Masters of Arts and holders of honorary degrees. The committee agreed upon a bill by which the Legislature should give to the Corporation and Board of Overseers power to enlarge the suffrage at their discretion, the consent of both Boards being required for every enlargement. This bill passed the House of Representatives by a large majority, but was first delayed in the Senate, and then loaded there with objectionable amendments; so that the friends of the measure at last requested that it be referred to the next General Court.

Of the ordinary degrees conferred in 1900, 553 gave the right of suffrage, and 411 did not give that right. In 1901, 608 gave the right of suffrage, and 423 did not. In 1865, the year of the Act which defines the existing suffrage for Overseers, the Masters of Arts were, almost without exception, persons who had already received the Harvard degree of Bachelor of Arts.

To-day a large proportion of them are persons who have not received the Harvard degree of Bachelor of Arts; and of these graduates of other colleges, more than half spend only one year in Cambridge. The Dean of the Graduate School reports (p. 119) that men who resort to that School for one year "are likely to continue to be a majority of its students." He also reports (p. 124) that 62 per cent. of the students of the School do not hold the Harvard first degree in Arts. That the suffrage should be conferred on these Masters of Arts, and should not be conferred upon the graduates of the Scientific School, who, as a rule, have spent four years in Cambridge, is only one of the extraordinary anomalies created by applying the legislation of 1865 without modification to the new conditions of 1901. A graduate of the Law School, or of the Divinity School, who was previously a graduate of some other college than Harvard, has probably spent three full years in Cambridge, and has boarded at Memorial Hall or Randall Hall, used the Gymnasium and the libraries, and been welcomed to any College teams and crews for which he was fit; yet he is denied the suffrage, when many Masters of Arts, who were Bachelors of Arts of other colleges, obtain it on one year of residence in Cambridge. Hereafter such graduates of the Divinity, Law, or Scientific School will probably have been for years members in full standing of the new Harvard Union. The Joint Committee of the two Boards will advocate their bill again at the ensuing session of the Legislature.

At the end of the year 1899-1900 there was a deficit of \$36,669.51 in the account called "University, College, Scientific School, and Library," and in the preceding year there had been an even larger deficit. In the fall of 1900, the Corporation, therefore, took all possible measures to reduce expenses, and to bring in new annual resources, for this very important account. A portion of the Henry T. Morgan Fund, an unrestricted fund which dates from 1883, had been applied to the support of fellowships in the Graduate School. The Corporation voted to discontinue this application, and use the whole income of the Fund towards administrative expenses in the University Library. To replace the Morgan Fellowships, they voted to establish from the income of the Edward Austin Fund

four Edward Austin Fellowships of \$500 each. The Corporation also abolished ten University Scholarships in the Graduate School, four Normal School Scholarships in the Lawrence Scientific School, and eight University Scholarships in the Lawrence Scientific School, from the close of the year 1900-01. They imposed a fee of \$5 on candidates at the admission examinations for the College and the Scientific School when the examination is passed in Cambridge. This fee has heretofore been paid only by candidates examined at other places than Cambridge. They ordered that from and after the close of the academic year 1900-01, all students taking the degree of Doctor of Philosophy, Doctor of Science, Master of Arts, or Master of Science, and those taking the degree of Bachelor of Arts or Bachelor of Science in one, two, or three years shall be charged a fee of \$20. The object of this last order was to collect an additional fee from persons who take one of the degrees of the University after a residence comparatively short.

It was a great satisfaction to the Corporation that the receipts of the University in the year under review were a little larger than the expenditures, and particularly that the account called "University, College, Scientific School, and Library" showed a small surplus for the year. The deficits of the two preceding years in this account had amounted together to \$78,497.45. This account paid the Veterinary School deficit of \$8,456.45; but it meets this charge for the last time.

The total endowment of the University continues to increase in three lines:—First, the number of buildings increases with some rapidity, and it is noticeable that the style of construction has undergone within ten years a great change for the better, so that all the newer buildings of the University are practically fireproof. Secondly, the total of the investments of the University yielding an income steadily increases;—thus, the gain between August 1, 1899, and July 31, 1901, was \$1,352,080.05. Thirdly, the collections of books, specimens, apparatus, and other appliances for teaching, increase from year to year. Nevertheless, many urgent needs weigh upon the minds of the Faculties and the governing boards, and impair in a very significant measure the usefulness of the University. The income of ten millions of dollars could be applied in a week to

University objects long known and thoroughly studied; and even then the President and Fellows could not think of relaxing for a moment the cautious and frugal methods in which they have heretofore used the money entrusted to them.

Two interesting facts may be seen in the Treasurer's Statement: — First, the Medical School now has a larger endowment than any other professional department of the University. This fact is the more striking, because thirty years ago it had the smallest endowment among the professional departments. In 1869–70, the invested funds applicable in the Medical School amounted to \$45,136.54. On the 31st of July, 1901, the funds applicable in the Medical School amounted to \$1,098,489.74. Secondly, the benefactors of the University come from a wider territory than they used to, and represent a much greater variety of racial stock, religious opinion, and professional, commercial, or industrial connection.

Graduates of the College who take an interest in the completeness and clear arrangement of the Treasurer's Statement will be gratified to see in the table of Funds and Balances (pp. 41–53) that each fund now bears the date at which it was received, and that the arrangement under the several titles is an alphabetical one; so that any particular fund can be easily found, if its established name and the department to which it belongs be known. This improvement has been brought about by the Comptroller, Mr. Allen Danforth. It involved much careful investigation; and the result is a distinct contribution to the history of the University.

The attention of the Overseers is respectfully invited to the following reports of the Deans of the Faculties and Schools, and the Directors of the Scientific establishments. The President does not attempt to summarize these reports even in the briefest manner: they contain many interesting and important facts, and valuable discussions of academic problems, methods, and results.

CHARLES W. ELIOT, *President.*

CAMBRIDGE, 7 January, 1902.

# REPORTS OF DEPARTMENTS.

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## THE FACULTY OF ARTS AND SCIENCES.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—As Dean of the Faculty of Arts and Sciences I have the honor to submit the following report for the academic year 1900–01.

### INSTRUCTION.

I first present the usual account of the instruction provided by the Faculty or given under its authority, including the instruction given in the year 1900–01, the courses given in the Summer School of 1901, and the most important features of the scheme of instruction announced for the present year.

#### *Instruction given in 1900–01.*

The following list includes all the courses of instruction that were *actually given* under the authority of the Faculty in 1900–01, with a statement of the number of students of various classes and departments in each course. In my reports for the two preceding years descriptions of the courses were given with some fulness of detail, mainly for the purpose of showing the methods of teaching now in use among us. As these methods do not vary greatly from year to year it seems unnecessary to repeat the record. Fuller particulars of the contents of the several courses may be found in the Annual Catalogue for 1900–01, pp. 347 ff., where the courses offered for that year, but withdrawn because not taken by a sufficient number of competent students, or for some other reason, are also given.

Courses of Instruction are classed as *full courses* or *half-courses*, according to the estimated amount of work in each and its value in fulfilling the requirements for a degree. Half-courses are designated in the following list by the abbreviation *hf*. All others were full courses with the exception of German *B*, which counted as two courses. In the 'courses of research,' however, the work of a particular student is sometimes increased by special arrangement so

that the course counts for him as the equivalent of two, three, or four courses. The figure 1 or 2, attached like an exponent to the number or letter of a course, indicates that the course was given in the first or in the second half-year only. Courses not so designated extended through the year. A double dagger (‡) indicates that the course was open, under certain conditions, to properly qualified students of Radcliffe College.

The following abbreviations are used to designate the students in the several courses: Instr. for Instructor; Gr. for Graduate Student; Se. for Senior; Ju. for Junior; So. for Sophomore; Fr. for Freshman; Sp. for Special Student of Harvard College; Sc. for Scientific Student; Di. for Divinity Student; Law for Law Student; Me. for Medical Student; Bu. for Bussey Student; R. for Radcliffe Student.

#### COURSES OF INSTRUCTION GIVEN IN 1900-01.

##### Semitic Languages and History.

*For Undergraduates and Graduates:—*

1. Professor LYON, assisted by Dr. HAYNES.—Hebrew (elementary course).  
1 Gr., 2 Se., 1 Ju., 1 So., 3 Di. Total 8.
12. Professor LYON.—History of Israel, political and social, to the capture of Jerusalem by the Romans.  
12 Se., 10 Ju., 28 So., 2 Sp., 6 Sc., 4 Di. Total 62.
16. Professor TOY.—History of pre-Christian Hebrew Literature.  
1 Se., 5 Di. Total 6.
18. Professor TOY.—History of the Hebrew Religion, with comparison of other Semitic religions.  
2 Gr., 2 Di. Total 4.
- 14 *hf.* Professor TOY.—History of the Spanish Caliphate. The Barbary States. Moslems in Sicily.  
3 Se., 5 Ju., 2 So., 2 Sc. Total 12.

*Primarily for Graduates:—*

- ‡2. Professor TOY.—Hebrew (second course). Interpretation of parts of the Prophets and the Poetical Books.  
3 Se., 1 So., 1 Di. Total 5.
- ‡5. Professor LYON.—Assyrian (second course). The Chaldean Epic. Letters and commercial documents.  
1 Di. Total 1.
- ‡7. Professor TOY, assisted by Dr. HAYNES.—Arabic.  
1 Gr. Total 1.
- ‡8 *hf.* Professor TOY.—Arabic (second course). The Moallakāt; Motenebbi; Ibn Haldun; the Korān.  
1 Gr. Total 1.
- 9 *hf.* Professor TOY.—Ethiopic.  
2 Sp. Total 2.

##### Indo-Iranian Languages.

*For Undergraduates and Graduates:—*

- 1<sup>1</sup> *hf.* Professor LANMAN.—Elements of Sanskrit.  
2 Gr., 2 So., 1 Fr. Total 5.
- 1<sup>2</sup> *hf.* Professor LANMAN.—Sanskrit (continued).  
1 Gr., 2 So., 1 Fr. Total 4.



*Primarily for Graduates:—*

‡ <sup>2</sup> <i>hf.</i> Professor LANMAN. — Classical Sanskrit (course for rapid reading).	3 Gr., 2 Ju., 1 R.	Total 6.
‡ <sup>3</sup> <i>hf.</i> Professor LANMAN. — Vedic Sanskrit.	3 Gr., 2 Ju., 1 R.	Total 6.
‡ <sup>4</sup> <i>hf.</i> Professor LANMAN. — Pāli.	2 Gr., 1 Ju., 1 R.	Total 4.
‡ <sup>5</sup> <i>hf.</i> Professor LANMAN. — Pāli.	2 Gr., 1 Ju., 1 R.	Total 4.

**Classical Philology.***Primarily for Undergraduates:—***GREEK.**

<i>G.</i> Asst. Professor GULICK. — Course for Beginners.	1 So., 3 Fr., 2 Sp.	Total 6.
<i>A.</i> Mr. HARRIS. — Homer; Attic Prose. Composition.	8 So., 9 Fr., 5 Sp.	Total 17.
<i>B.</i> Professor WRIGHT, Asst. Professor GULICK, and Mr. HARRIS. — Greek Literature. Plato; Lysias; Xenophon; Elegiac, Iambic, and Lyric Poets; Euripides. Lectures on the History of Greek Literature.	10 So., 63 Fr.	Total 73.
<i>E hf.</i> Mr. HARRIS. — Greek Prose Composition (first course).	7 So., 13 Fr.	Total 20.
1. Mr. HARRIS. — Greek Literature. The Period of Athenian Supremacy. Herodotus; Aeschylus; Plutarch; Thucydides; Sophocles.	2 Se., 1 Ju., 5 So., 1 Fr., 1 Sp.	Total 10.
2. Asst. Professor CLIFFORD H. MOORE. — Greek Literature. Aristophanes; Thucydides; Aeschylus; Sophocles.	1 Ju., 26 So., 1 Sp.	Total 28.
3 <i>hf.</i> Asst. Professor C. P. PARKER. — Greek Prose Composition (second course).	1 Gr., 2 Se., 5 Ju., 6 So.	Total 14.

**LATIN.**

<i>A.</i> Dr. McDANIEL. — Cicero; Virgil. Composition.	3 So., 5 Fr., 8 Sp.	Total 16.
<i>B.</i> Professor MORGAN, Asst. Professors C. P. PARKER, HOWARD, and CLIFFORD H. MOORE, Dr. McDANIEL, and Mr. PRESCOTT. — Latin Literature. Livy; Horace; Terence.	9 So., 143 Fr., 3 Sp.	Total 155.
<i>E hf.</i> Dr. McDANIEL. — Latin Composition (first course). Translation of English narrative.	2 Se., 1 Ju., 7 So., 9 Fr.	Total 19.
1. Professors SMITH and MINTON WARREN. — Latin Literature. Horace; Tacitus.	1 Gr., 2 Ju., 21 So.	Total 24.
2. Asst. Professor C. P. PARKER. — Latin Literature. Tacitus; Horace.	2 Ju., 16 So., 3 Fr., 1 Sp.	Total 22.
3 <i>hf.</i> Asst. Professor HOWARD. — Latin Composition (second course).	3 Gr., 1 Se., 5 Ju., 6 So.	Total 15.

*For Undergraduates and Graduates:—*

## GREEK.

6. Professor WRIGHT and Asst. Professor GULICK.—Greek Literature. Demosthenes; Aeschines; Aeschylus; Sophocles; Aristophanes.  
2 Gr., 3 Se., 12 Ju., 1 So., 1 Sp. Total 19.
- 7 *hf.* Professor WRIGHT.—Greek Prose Composition (third course).  
7 Gr., 2 Se., 1 Ju. Total 10.
8. Professor GOODWIN.—Greek Philosophy. Plato; Aristotle.  
6 Gr., 12 Se. Total 18.
10. Professor WHITE.—The Life of the Ancient Athenians, described and illustrated by the aid of the literature and of the monuments.  
7 Gr., 39 Se., 33 Ju., 16 So., 1 Fr., 4 Sp., 8 Sc. Total 108.
11. Professor WHITE.—History of the Greek Drama.  
7 Gr., 8 Se., 7 Ju., 12 So., 1 Sp., 1 Sc. Total 36.

## LATIN.

6. Asst. Professor HOWARD.—Latin Literature. Suetonius; Pliny; Juvenal; Martial.  
4 Se., 13 Ju., 4 So. Total 21.
- 18<sup>2</sup> *hf.* Professor SMITH.—Latin Literature. Catullus and the Elegiac Poets.  
5 Gr., 5 Se., 1 Ju., 2 So. Total 13.
- 7 *hf.* Asst. Professor PARKER.—Latin Composition (third course).  
6 Gr., 2 Se. Total 8.
- 8<sup>1</sup> *hf.* Professor SMITH.—Latin Literature. Plautus.  
8 Gr., 6 Se., 1 Ju. Total 15.
- 8<sup>2</sup> *hf.* Professor SMITH.—Latin Literature. Lucretius.  
6 Gr., 5 Se., 1 Ju. Total 12.
11. Professor SMITH.—History of Latin Literature (Poetry).  
14 Gr., 3 Se., 1 Ju. Total 18.

*Primarily for Graduates:—*

## CLASSICAL PHILOLOGY.

25. Asst. Professor CLIFFORD H. MOORE.—Proseminary. Introduction to the methods of Criticism and Research, with special reference to the textual criticism and interpretation of Classical Authors. 10 Gr. Total 10.
- ‡23. Professor GOODWIN.—Aeschylus. 9 Gr., 2 Se. Total 11.
38. Professor WHITE.—Aristophanes. 9 Gr., 2 Se. Total 11.
- 36<sup>1</sup> *hf.* Professor MORGAN.—Early Greek Oratory. Gorgias; Antiphon; Andocides. 5 Gr. Total 5.
- ‡27<sup>2</sup> *hf.* Professor GOODWIN.—Aristotle (Politics and parts of the Constitution of Athens). 8 Gr., 1 Se. Total 4.
- ‡54. Asst. Professor ROPES.—The Acts of the Apostles. 1 Gr., 2 Di. Total 3.
- 50<sup>2</sup> *hf.* Professor MORGAN.—Roman Satire from Ennius to Juvenal. 8 Gr., 1 Se. Total 9.

- 45<sup>1</sup> *hf.* Professor MORGAN. — The early legal career of Cicero, from its outset to the end of the prosecution of Verres. 7 Gr., 3 Se. Total 10.
46. Asst. Professor HOWARD. — The Second Punic War. Livy. 6 Gr. Total 6.
- ‡31<sup>2</sup> *hf.* Professor WRIGHT. — Introduction to Greek Epigraphy. 3 Gr., 1 Se., 1 R. Total 5.
- 30<sup>1</sup> *hf.* Professor WRIGHT. — Introduction to Greek Palaeography. 3 Gr. Total 3.
- ‡22<sup>2</sup> *hf.* Professor MINTON WARREN. — Latin Grammar (Sounds and Inflections). 9 Gr., 1 Se. Total 10.
- ‡31<sup>1</sup> *hf.* Professor MINTON WARREN. — The Elements of Oscan and Umbrian. 3 Gr. Total 3.
- ‡63<sup>1</sup> *hf.* Professor MINTON WARREN. — Introduction to Latin Epigraphy. 8 Gr., 1 R. Total 9.
- ‡49 *hf.* Professor WRIGHT. — The literary and epigraphic sources for the history of Greek art, especially sculpture and vase-painting. 4 Gr., 1 R. Total 5.

## 20. THE SEMINARY OF CLASSICAL PHILOLOGY.

Professors MINTON WARREN and MORGAN, Directors for 1900-01. — Training in philological criticism and research. Text-criticism and interpretation of Greek and Latin authors: for 1900-01, Lysias and Horace.

10 Gr. Total 10.

## English.

*Primarily for Undergraduates: —*

- A. Professors A. S. HILL and BRIGGS, and Messrs. HURLBUT, COPELAND, J. G. HART, NOYES, GREENOUGH, KIDDER, MACY, P. L. MILLER, RIDEOUT and CHURCHILL. — Rhetoric and English Composition. 1 Ju., 2 So., 391 Fr., 42 Sp., 134 Sc., 5 Bu. Total 575.
- BChf.* Messrs. T. HALL and R. H. H. HART. — English Composition. 1 Ju., 3 So., 1 Fr., 2 Sp., 73 Sc. Total 80.
31. Messrs. LA ROSE and SWANN. — English Composition. 3 Se., 11 Ju., 75 So., 80 Fr., 7 Sp., 5 Sc. Total 131.
23. Professor WENDELL, Dr. MAYNADIER, and Mr. SEAVER. — English Composition. 5 Se., 5 Ju., 89 So., 49 Fr., 13 Sp., 6 Sc., 1 Bu. Total 168.
- 28 *hf.* Professors BRIGGS, WENDELL, and KITTREDGE, Asst. Professor BAKER, and Messrs. J. G. HART and GENTNER. — English Literature. History and Development of English Literature in outline. 147 Fr., 15 Sp. Total 162.
18. Asst. Professor BAKER, Messrs. T. HALL, HUNTINGTON, and H. L. PRESCOTT. — The FORMS of Public Address. 16 Se., 53 Ju., 42 So., 6 Sp., 1 Sc. Total 118.
30. Asst. Professor BAKER, Messrs. WINTER and BOLLING. — Forensics and Debating. 2 Gr., 14 Se., 19 Ju., 4 So. Total 39.
- 10 *hf.* Messrs. WINTER and HILLS. — Elocution. 32 Se., 71 Ju., 50 So., 24 Fr., 8 Sp., 4 Sc. Total 189.

*For Undergraduates and Graduates:—*

- 3<sup>1</sup> *hf.* DR. NEILSON. — Anglo-Saxon. 9 Gr., 5 Se., 1 Ju., 1 So., 1 Fr. Total 17.
1. PROFESSOR KITTREDGE and DR. NEILSON. — English Literature. Chaucer. 12 Gr., 6 Se., 2 Ju. Total 20.
- 35 ASST. PROFESSOR GARDINER. — English Literature. The English Bible. 1 Gr., 1 Se., 2 Ju., 1 So., 1 Sc. Total 6.
2. PROFESSOR KITTREDGE. — English Literature. Shakspeare (six plays). 22 Gr., 22 Se., 28 Ju., 33 So., 2 Fr., 6 Sp., 2 Sc., 1 Law. Total 116.
- 11<sup>1</sup> *hf.* DR. F. N. ROBINSON. — English Literature. Bacon. 6 Gr., 9 Se., 4 Ju., 9 So., 1 Fr. Total 29.
- 11<sup>2</sup> *hf.* DR. NEILSON. — English Literature. Milton. 6 Gr., 11 Se., 7 Ju., 12 So., 3 Fr., 1 Sc. Total 40.
- 32a<sup>1</sup> *hf.* PROFESSOR WENDELL and MR. COBB. — English Literature of the Elizabethan Period, from Tottel's Miscellany to the death of Spenser (1557–1599). 9 Gr., 44 Se., 31 Ju., 79 So., 4 Fr., 10 Sp., 6 Sc. Total 183.
- 32b<sup>2</sup> *hf.* DR. NEILSON and MR. GENTNER. — English Literature, from the death of Spenser to the Closing of the Theatres (1599–1642). 8 Gr., 39 Se., 30 Ju., 84 So., 6 Fr., 12 Sp., 9 Sc. Total 171.
- 7a<sup>1</sup> *hf.* DR. MAYNADIER and MR. GREENOUGH. — English Literature of the Period of Queen Anne, from the death of Dryden to the death of Swift (1700–1745). 7 Gr., 58 Se., 34 Ju., 49 So., 5 Fr., 4 Sp., 13 Sc., 1 Me. Total 171.
- 7b<sup>2</sup> *hf.* ASST. PROFESSOR BAKER and MR. HUNTINGTON. — English Literature, from the death of Swift to the publication of the Lyrical Ballads (1745–1798). 17 Gr., 60 Se., 47 Ju., 65 So., 9 Fr., 5 Sp., 16 Sc. Total 209.
- 37<sup>2</sup> *hf.* DR. MAYNADIER. — English Literature. The Story of King Arthur, from Malory to the present time. 4 Gr., 20 Se., 7 Ju., 14 So., 1 Fr., 7 Sp., 3 Sc. Total 56.
- 34 *hf.* MR. COPELAND and MR. REYNOLDS. — English Literature. English Letter Writers. 1 Gr., 26 Se., 33 Ju., 35 So., 2 Fr., 6 Sp., 4 Sc. Total 107.
12. ASST. PROFESSOR GARDINER. — English Composition. 6 Gr., 13 Se., 9 Ju., 2 So., 1 Sp., 1 Sc. Total 32.
- Primarily for Graduates:—*
- 19<sup>2</sup> *hf.* DR. F. N. ROBINSON. — Historical English Grammar. 9 Gr. Total 9.
- 3<sup>2</sup> *hf.* DR. F. N. ROBINSON. — Anglo-Saxon. Béowulf. 14 Gr., 4 Se., 1 So. Total 19.
4. PROFESSOR KITTREDGE and DR. SCHOFIELD. — Early English. English Literature from 1200 to 1450. 14 Gr. Total 14.
- 21<sup>2</sup> *hf.* PROFESSOR KITTREDGE. — Early English. The Metrical Romances. 5 Gr. Total 5.
- 40<sup>1</sup> *hf.* DR. NEILSON. — Scottish Literature, from Barbour to Lindsay. 3 Gr. Total 3.

14. Asst. Professor BAKER.—English Literature. The Drama, from the Miracle Plays to the Closing of the Theatres.  
14 Gr., 5 Se., 1 Ju., 2 So., 1 Sc. Total 23.
- 39<sup>1</sup> *hf.* Asst. Professor BAKER.—English Literature. The Drama in England from 1642 to 1900. 11 Gr., 9 Se., 6 Ju., 2 So., 2 Sp., 1 Sc. Total 31.
- 24<sup>1</sup> *hf.* Professor A. S. HILL.—English Literature. Studies in the Poetry of the Nineteenth Century. 7 Gr., 7 Se., 1 Ju. Total 15.
- 5<sup>1</sup> *hf.* Professor A. S. HILL.—English Composition (advanced course). 11 Gr., 5 Se., 1 Ju. Total 17.

## COURSES OF RESEARCH.

- [20*g.*] Asst. Professor BAKER.—The English Drama: its history, and its relation to Continental Drama. 2 Gr. Total 2.
- [20*h.*] Professor WENDELL.—The Literary History of America. 1 Gr. Total 1.

## Germanic Languages and Literatures.

## GERMAN.

*Primarily for Undergraduates:—*

- A. Mr. NICHOLS, Dr. COAR, Dr. SKINNER, and Messrs. RIEMER, LAWRENCE, and DEMETER.—Elementary Course.  
2 Se., 1 Ju., 10 So., 199 Fr., 16 Sp., 12 Sc. Total 241.
- D. Mr. W. G. HOWARD, Dr. SKINNER, and Mr. RIEMER.—Elementary Course.  
1 Sp., 61 Sc. Total 62.
- B. Mr. W. G. HOWARD.—Elementary Course (5 hours a week, counting as two courses). 1 Se., 3 So., 15 Fr., 4 Sp. Total 23.
- C. Mr. W. G. HOWARD, Drs. COAR and SKINNER.—German Prose and Poetry.  
1 Se., 5 Ju., 6 So., 58 Fr., 7 Sp. Total 77.
- 1*a.* Asst. Professor SCHILLING and Drs. COAR and SKINNER.—German Prose and Poetry. 1 Gr., 3 Se., 3 Ju., 55 So., 19 Fr., 4 Sp., 3 Sc. Total 88.
- 1*b.* Associate Professor BARTLETT.—German Prose. Subjects in History and Biography. 2 Se., 4 Ju., 11 So., 3 Fr., 1 Sp., 3 Sc. Total 24.
- 1*c.* Dr. BIERWIRTH and Mr. REED.—German Prose. Subjects in Natural Science. 1 Se., 5 Ju., 9 So., 2 Fr., 1 Sp., 28 Sc., 2 Bu. Total 48.
- Ehf.* Dr. COAR.—German Grammar and practice in writing German (first course). 1 Se., 3 So., 8 Fr. Total 12.
- Fhf.* Mr. NICHOLS.—German Grammar and practice in writing German (second course). 4 Se., 5 Ju., 6 So., 2 Fr., 1 Sp. Total 18.
- Ghf.* Dr. BIERWIRTH.—German Grammar and practice in writing German (third course). 2 Se., 1 Ju., 1 So., 2 Sp., 1 Instr. Total 7.
- 2*a.* Associate Professor BARTLETT and Dr. BIERWIRTH.—Introduction to German Literature of the Eighteenth and Nineteenth Centuries. Lessing, Goethe, and Schiller; ballads and lyrics; composition.  
2 Se., 5 Ju., 13 So., 21 Fr. Total 41.

2. Dr. BIERWIRTH. — The German Drama of the Classic Period. Lessing; Schiller; Goethe. 2 Se., 9 Ju., 10 So., 8 Fr., 4 Sp., 2 Sc. Total 35.
3. Professor VON JAGEMANN. — Schiller and his Contemporaries. Schiller; Lessing; Goethe; ballads and lyrics. Practice in writing German. 2 Se., 6 Ju., 6 So., 3 Fr., 1 Sp. Total 18.
4. Asst. Professor SCHILLING. — Goethe and his Time. Lessing; Schiller; Goethe. 1 Gr., 5 Se., 5 Ju., 15 So., 7 Fr., 1 Sp., 1 Sc. Total 35.

## GERMAN LITERATURE.

*For Undergraduates and Graduates: —*

- 25 *hf.* Professor FRANCKE, assisted by Mr. LAWRENCE. — History of German Literature in outline, with reading of representative works in English translations. 13 Se., 13 Ju., 28 So., 2 Fr., 3 Sp. Total 59.
5. Professor FRANCKE and Mr. RANSMEIER. — History of German Literature to the Nineteenth Century, with special study of the Classic Periods of the Twelfth and Eighteenth Centuries. 4 Gr., 7 Se., 7 Ju., 9 So. Total 27.
- 26<sup>1</sup> *hf.* Mr. NICHOLS. — German Literature in the first half of the Nineteenth Century. Kleist; Uhland; Heine. 3 Gr., 8 Se., 8 Ju., 5 So., 1 Fr. Total 25.
- 26<sup>2</sup> *hf.* Mr. NICHOLS. — German Literature in the second half of the Nineteenth Century. The Development of the Novel and the Drama. 2 Gr., 4 Se., 10 Ju., 5 So., 1 Fr. Total 22.
8. Asst. Professor SCHILLING. — German Literature in the Twelfth and Thirteenth Centuries. Nibelungenlied; Kudrun; Hartmann; Wolfram; Walther von der Vogelweide. Translation into modern German. 4 Gr., 2 Se., 1 Ju., 1 So. Total 8.

*Primarily for Graduates: —*

- †9<sup>1</sup> *hf.* Professor FRANCKE. — German Literature and Art in the Thirteenth and Fourteenth Centuries. First Climax of Religious Sculpture. The Mystic Movement. Meister Eckhart; Suso; Tauler. 6 Gr., 1 Sp., 4 R. Total 11.
- †9<sup>2</sup> *hf.* Professor FRANCKE. — German Literature and Art in the Fifteenth Century. The Religious Drama and its relation to Religious Painting from the Van Eycks to Dürer. 6 Gr., 1 Sp., 4 R. Total 11.

## SCANDINAVIAN LITERATURE.

*For Undergraduates and Graduates: —*

1. Dr. SCHOFIELD. — Modern Danish and Norwegian Literature. Holberg, Oehlenschläger, Ibsen, Björnson, and other writers. Practice in the spoken language. 1 Gr., 1 Se., 1 Ju., 1 So., 1 Sp. Total 5.

## GERMANIC PHILOLOGY.

*Primarily for Graduates: —*

- ‡12<sup>1</sup> *hf.* Professor VON JAGEMANN. Gothic. Introduction to the study of Germanic Philology. General introduction and Phonology. 11 Gr., 1 Sp. Total 12.

12<sup>a</sup> *hf.* Professor VON JAGEMANN.—Introduction to the study of Germanic Philology, continued. Morphology, Etymology.

8 Gr., 1 Sp., 2 R. Total 11.

14<sup>a</sup> *hf.* Asst. Professor SCHILLING.—Old Saxon. Introduction to Germanic Metrics.

2 Gr., 1 Instr., 1 R. Total 4.

15<sup>a</sup> *hf.* Professor VON JAGEMANN.—Old High German.

5 Gr. Total 5.

#### SEMINARY COURSES IN GERMANIC LANGUAGES AND LITERATURES.

*Primarily for Graduates:—*

130a. Professor VON JAGEMANN.—Hartmann von Aue. 3 Gr. Total 8.

130c. Professor FRANCKE.—Topics in the German Romantic Movement.

4 Gr. Total 4.

#### Romance Languages and Literatures.

##### FRENCH.

*Primarily for Undergraduates:—*

A. Messrs. C. H. C. WRIGHT, GIFFORD and UNDERWOOD.—Elementary Course.

1 Gr., 2 Se., 1 Ju., 3 So., 63 Fr., 13 Sp., 31 Sc., 1 Di., 1 Law. Total 116.

1c. Dr. FORD and Mr. MORLEY.—Reading, translation, grammar, and composition. 1 Se., 1 Ju., 5 So., 1 Fr., 3 Sp., 40 Sc., 2 Bu. Total 53.

1b. Mr. BABBITT.—French Prose, historical and general. Translation from French into English. 6 Ju., 19 So., 38 Fr., 3 Sp., 4 Sc. Total 70.

1a. Associate Professor DE SUMICHRAST and Mr. BRUN.—Reading, translation, grammar, and composition.

1 Gr., 4 Ju., 15 So., 21 Fr., 9 Sp., 5 Sc. Total 55.

2c. Asst. Professor MARCOU, Dr. FORD, Messrs. MORLEY and UNDERWOOD.—French Prose and Poetry. Corneille; Racine; Molière; Beaumarchais; Victor Hugo; Alfred de Musset; Balzac. Composition.

2 Se., 10 Ju., 40 So., 95 Fr., 4 Sp., 4 Sc. Total 155.

2a. Messrs. C. H. C. WRIGHT, BABBITT, and LA MESLÉE.—French Prose and Poetry. Corneille; Racine; Molière; Victor Hugo; George Sand; Alfred de Musset; Sainte-Beuve. Composition.

2 Se., 10 Ju., 34 So., 67 Fr., 4 Sp., 3 Sc. Total 120.

3 *hf.* Messrs. BRUN and LA MESLÉE.—Practice in speaking and writing French (elementary course).

9 Ju., 33 So., 16 Fr., 6 Sp., 1 Sc. Total 65.

4 *hf.* Mr. BRUN.—Practice in speaking and writing French (intermediate course).

4 Se., 16 Ju., 28 So., 9 Fr., 2 Sp., 3 Sc. Total 62.

5 *hf.* Mr. BRUN.—Practice in speaking and writing French (advanced course).

2 Gr., 2 Se., 3 Ju., 3 So., 3 Fr. Total 13.

*For Undergraduates and Graduates:—*

6c. Professor GRANDGENT.—General view of French Literature (course conducted in English). 3 Gr., 4 Se., 10 Ju., 17 So., 2 Fr., 5 Sp. Total 41.

6. Associate Professor DE SUMICHRAST and Mr. BRUN.—General view of French Literature (course conducted in French).

2 Gr., 5 Se., 5 Ju., 23 So., 1 Fr., 1 Sc. Total 37.

13. Mr. C. H. C. WRIGHT. — The rise and growth of Classicism in French Literature. 1 Gr., 1 Se. Total 2.
14. Asst. Professor MARCOU. — French Lyric Poetry from Villon and the Fifteenth Century to the present time. 2 Gr., 1 Se., 1 Ju., 1 So. Total 5.
18. Associate Professor DE SUMICHRAST and Mr. LA MESLÉE. — French Life in the Seventeenth and Eighteenth Centuries, described and illustrated by the literature and works of art. 12 Se., 12 Ju., 12 So., 1 Fr., 1 Sp., 3 Sc. Total 41.
- 8<sup>h</sup> hf. Associate Professor DE SUMICHRAST. — Voltaire and his contemporaries. 3 Gr., 10 Se., 10 Ju., 3 So., 1 Law. Total 27.
- 8<sup>h</sup> hf. Associate Professor DE SUMICHRAST. — The Drama in the Eighteenth Century. 2 Gr., 11 Se., 12 Ju., 3 So., 1 Sc. Total 29.
10. Professor F. BÔCHER. — French Literature in the Sixteenth Century. 2 Se., 6 Ju., 1 So. Total 9.

*Primarily for Graduates : —*

- 17 hf. Mr. BABBITT. — Literary criticism in France during the Nineteenth Century. 2 Gr., 1 Se. Total 3.
15. Professor F. BÔCHER. — French Comedy in the Sixteenth and Seventeenth Centuries. 4 Gr., 3 Se., 1 Ju. Total 8.
12. Professor SHELDON. — Old French Literature. The national Epic Poetry (the Chansons de geste). 2 Gr. Total 2.

## ITALIAN.

*Primarily for Undergraduates : —*

1. Professor GRANDGENT and Mr. CAPOTOSTO. — Elementary course. 3 Gr., 9 Se., 10 Ju., 8 So., 9 Fr., 4 Sp., 2 Sc. Total 45.

*For Undergraduates and Graduates : —*

2. Mr. FLETCHER. — Literature of the Fifteenth and Sixteenth Centuries. Torquato Tasso; Ariosto; Machiavelli; Benvenuto Cellini. 1 Gr., 1 Se., 4 So. Total 6.

*Primarily for Graduates : —*

4. Professor NORTON. — Literature and the Fine Arts in Italy during the Middle Ages and the Renaissance, with special study of Dante. 4 Gr., 3 Se., 3 Ju. Total 10.

## SPANISH.

*Primarily for Undergraduates : —*

1. Dr. FORD and Messrs. LA MESLÉE and MORLEY. — Elementary course. 5 Gr., 17 Se., 29 Ju., 32 So., 28 Fr., 1 Sp., 3 Sc. Total 115.

*For Undergraduates and Graduates : —*

5. Dr. FORD. — Spanish Prose and Poetry of the Nineteenth Century. Composition. 2 Gr., 11 Se., 12 Ju., 4 So., 2 Fr., 1 Sp. Total 32.
2. Asst. Professor MARCOU. — Literature of the Sixteenth and Seventeenth Centuries. Cervantes; Lope de Vega; Calderón. 6 Se., 4 Ju., 2 So. Total 12.



*Primarily for Graduates:—*

- ‡3. Dr. FORD. — Early Spanish. The Poem of the Cid. Spanish Literature to the Fifteenth Century. 9 Gr., 1 Se. Total 10.

## ROMANCE PHILOLOGY.

*Primarily for Graduates:—*

3. Professor SHELDON. — Old French. 10 Gr. Total 10.  
 ‡4. Professor GRANDGENT. — Provençal. 9 Gr. Total 9.  
 ‡5<sup>1</sup> hf. Professor GRANDGENT. — Low Latin. 2 Gr. Total 2.

## Comparative Literature.

*For Undergraduates and Graduates:—*

2. Professor SHELDON. — Mediæval Literature in the vulgar tongues, with especial reference to the influence of France and Provence. 6 Gr. Total 6.  
 3. Mr. FLETCHER. — Tendencies of European Literature during the Renaissance. 3 Gr. Total 3.  
 \*5. Asst. Professor GATES. — The History of Romanticism in England, Germany, and France during the Nineteenth Century. 5 Gr. Total 5.

*Primarily for Graduates:—*

10. Dr. SCHOFIELD. — The Origin and Literary History of the Arthurian Legends and Romances. 3 Gr. Total 3.  
 11 hf. Mr. FLETCHER. — The Literary Relations of England and the Continent in the Sixteenth Century. 4 Gr. Total 4.

## Celtic.

*Primarily for Graduates:—*

- 1<sup>1</sup> hf. Dr. F. N. ROBINSON. — Old Irish. General introduction to Celtic Philology. 1 Gr. Total 1  
 2<sup>2</sup> hf. Dr. F. N. ROBINSON. — Middle Irish. History of Irish Literature. 1 Gr. Total 1.

## Slavic Languages.

*For Undergraduates and Graduates:—*

- 1a. Mr. WIENER. — Russian. 2 Se., 1 So., 1 Fr. Total 4.

## History and Government.

## HISTORY.

*Primarily for Undergraduates:—*

1. Asst. Professor COOLIDGE, assisted by Messrs. STOBBS, PARKE, DENNIS, and MURPHY. Mediæval and Modern European History (introductory course). 2 Ju., 55 So., 404 Fr., 39 Sp., 26 Sc. Total 526.

*For Undergraduates and Graduates:—*

3. Dr. BOTSFORD. — History of Rome to the Reign of Diocletian. 4 Gr., 9 Se., 3 Ju., 5 So., 1 Fr., 2 Sp. Total 24.

6. Asst. Professor PLATNER. — The Church of the first six Centuries.  
3 Gr., 1 Se., 1 Sp., 7 Di. Total 12.
7. Professor EMERTON. — The Era of the Reformation in Europe from the rise of Italian Humanism to the close of the Council of Trent (1850-1868).  
10 Gr., 4 Se., 1 Ju., 2 So., 2 Sp., 2 Di. Total 21.
21. Asst. Professor PLATNER. — History of the Church since the Reformation.  
1 Gr., 4 Se., 1 Di. Total 6.
8. Asst. Professor GROSS. — History of France to the reign of Francis I.  
6 Gr., 8 Se., 3 Ju., 2 So. Total 19.
9. Asst. Professor GROSS. — Constitutional History of England to the Sixteenth Century.  
9 Gr., 19 Se., 9 Ju., 3 So., 1 Fr., 1 Sp. Total 42.
11. Professor CHANNING. — History of England during the Tudor and Stuart Periods.  
10 Gr., 22 Se., 31 Ju., 18 So., 1 Sc., 1 Di. Total 83.
- 12<sup>1</sup> *hf.* Professor MACVANE, assisted by Mr. MORSE. — English History from the Revolution of 1688 to the Reform of Parliament.  
7 Gr., 8 Se., 5 Ju., 15 So., 1 Fr., 3 Sp., 1 Sc., 1 Di. Total 41.
- 12<sup>2</sup> *hf.* Professor MACVANE, assisted by Mr. MORSE. — English History since the Reform of Parliament.  
10 Gr., 5 Se., 5 Ju., 20 So., 4 Fr., 2 Sp., 1 Di. Total 47.
- 16<sup>1</sup> *hf.* Professor MACVANE and Dr. FAY. — History of Continental Europe from the peace of Utrecht to the fall of Napoleon I.  
5 Gr., 47 Se., 43 Ju., 85 So., 7 Fr., 4 Sp., 7 Sc. Total 198.
- 16<sup>2</sup> *hf.* Professor MACVANE and Dr. FAY. — History of Continental Europe since the fall of Napoleon I.  
6 Gr., 31 Se., 42 Ju., 83 So., 8 Fr., 5 Sp., 5 Sc. Total 180.
19. Asst. Professor COOLIDGE. — The Eastern Question.  
2 Gr., 8 Se., 9 Ju., 1 Sp. Total 20.
10. Professor CHANNING, assisted by Mr. YEOMANS. — American History to 1783.  
3 Gr., 26 Se., 45 Ju., 126 So., 6 Fr., 13 Sp., 2 Sc. Total 221.
18. Professor HART, assisted by Messrs. DORMAN and BOBB. — Constitutional and Political History of the United States (1783-1865).  
5 Gr., 50 Se., 90 Ju., 55 So., 3 Fr., 9 Sp., 4 Sc. Total 216.
- Primarily for Graduates: —*
- †17. Dr. BOTSFORD. — Constitutional History of Athens. 1 Se., 1 So. Total 2.
- 25 *hf.* Asst. Professor COOLIDGE. — Principles of Foreign Policy in Modern European History.  
2 Gr., 1 Se. Total 3.
26. Professor EMERTON. — History of Christian Thought, considered in its relation to the prevailing philosophy of each period, from the earliest times to the Eighteenth Century.  
4 Se., 1 So., 7 Di. Total 12.
- 29<sup>2</sup> *hf.* Professor BEALE. — History of Crime in England and America.  
1 Gr., 4 Se., 1 So. Total 6.

## SEMINARY COURSES IN HISTORY AND GOVERNMENT.

*Primarily for Graduates :—*

- 20a. Professor EMERTON. — Church and State. 1 Gr. Total 1.
- 20b. Asst. Professor GROSS. — English Institutions in the Middle Ages. 1 Gr. Total 1.
- 20c. Professor MACVANE. — Recent Constitutional History. 4 Gr., 1 Sp. Total 5.
- 20d. Asst. Professor COOLIDGE. — Recent Diplomatic History of Europe. 1 Gr. Total 1.
- 20e. Professors CHANNING and HART. — American History and Institutions. 8 Gr. Total 8.
- 20f. Professor CHANNING. — English Institutions in the Tudor and Stuart Periods. 2 Gr. Total 2.
- 20h. Asst. Professor PLATNER. — Early Christian Literature. 1 Di. Total 1.

## GOVERNMENT.

*Primarily for Undergraduates :—*

1. Professor LOWELL, assisted by Messrs. WARREN, NEWHALL, FULLERTON, and BURNHAM. — Constitutional Government (elementary course). 1 Se., 4 Ju., 126 So., 273 Fr., 23 Sp., 23 Sc. Total 450.

*For Undergraduates and Graduates :—*

4. Professor STROBEL, assisted by Mr. A. L. RICHARDS. — Elements of International Law. 5 Gr., 34 Se., 27 Ju., 4 So., 1 Sc., 1 Law. Total 72.
- 7<sup>1</sup> h. Professor MACVANE. — Leading Principles of Constitutional Law. Selected cases (American and English). 2 Gr., 11 Se., 6 Ju., 2 So., 1 Law. Total 22.

*Primarily for Graduates :—*

- 8<sup>1</sup> h. Dr. LAPSLEY. — Legal Institutions of Europe in the Middle Ages. Early Germanic Law; Mediaeval French and German Law; Revival of the Roman Law. 1 Gr., 1 Se. Total 2.
10. Professor LOWELL. — Modern Governments. Studies in existing Political Systems and in the influence of Political Parties. 12 Gr., 15 Se., 20 Ju., 5 So., 1 Sp., 2 Sc. Total 55.
11. Professor HART. — The American Political System, national, state, and municipal. 6 Gr., 7 Se., 1 Ju., 1 So., 1 Sp. Total 16.
14. Professor J. B. THAYER. — Constitutional Law in the United States. 8 Gr. Total 8.
15. Professor STROBEL. — International Law as administered by the Courts. 3 Gr. Total 3.
- 18<sup>1</sup> h. Mr. WYMAN. — Administrative Law in the United States. 1 Gr., 2 Se., 1 Jr., 18 Law. Total 22.

## Economics.

*Primarily for Undergraduates :—*

1. Professor TAUSSIG, DR. SPRAGUE and ANDREW, and Messrs. BEARDSLEY and PATTEN. — Outlines of Economics.

23 Se., 70 Ju., 257 So., 29 Fr., 25 Sp., 35 Sc., 1 Law, 2 Bu. Total 442.

*For Undergraduates and Graduates :—*

2. Asst. Professor CARVER. — Economic Theory in the Nineteenth Century.  
6 Gr., 15 Se., 16 Ju., 5 So., 2 Sp., 1 Sc. Total 45.
3. Asst. Professor CARVER. — The Principles of Sociology. Development of the Modern State, and of its Social Functions.  
9 Gr., 22 Se., 8 Ju., 14 So., 3 Sp., 1 Di. Total 57.
10. Professor ASHLEY. — The Mediaeval Economic History of Europe.  
6 Gr., 4 Se., 1 Ju. Total 11.
17. Professor ASHLEY. — The Economic Organization and Resources of European Countries.  
5 Gr., 14 Se., 9 Ju., 3 So., 1 Sp., 2 Sc. Total 34.
6. Professor TAUSSIG. — The Economic History of the United States.  
9 Gr., 63 Se., 68 Ju., 13 So., 4 Sp., 7 Sc. Total 164.
- 9<sup>h</sup> hf. Mr. W. F. WILLOUGHBY. — The Labor Question in Europe and the United States. The Social and Economic Condition of Workingmen.  
3 Gr., 53 Se., 40 Ju., 35 So., 3 Fr., 6 Sp., 6 Sc. Total 146.
- 9<sup>a</sup> hf. Mr. W. F. WILLOUGHBY. — Provident Institutions. Workingmen's Insurance, Friendly Societies, Savings Banks.  
1 Gr., 13 Se., 5 Ju., 2 So., 1 Sp. Total 22.
- 5<sup>h</sup> hf. Mr. MEYER. — Railways and other Public Works, under Public and Corporate Management. 4 Gr., 52 Se., 17 Ju., 4 So., 1 Sp., 8 Sc. Total 86.
- 5<sup>h</sup> hf. Mr. MEYER. — Railways and other Public Works (advanced course).  
3 Gr., 4 Se., 1 Ju., 1 So. Total 9.
- 8<sup>h</sup> hf. Dr. ANDREW. — Money.  
3 Gr., 56 Se., 41 Ju., 8 So., 1 Fr., 4 Sp., 9 Sc. Total 122.
- 12<sup>h</sup> hf. Dr. SPRAGUE. — Banking and the history of the leading Banking Systems.  
4 Gr., 51 Se., 43 Ju., 16 So., 4 Sp., 9 Sc., 1 Law. Total 128.
- 12<sup>a</sup> hf. Mr. MEYER. — International Payments and the Flow of the Precious Metals.  
2 Gr., 9 Se., 4 Ju., 1 Sc. Total 16.
- 18<sup>h</sup> hf. Mr. W. M. COLE. — The Principles of Accounting.  
43 Se., 4 Ju., 2 So., 1 Sp., 4 Sc., 1 Law, 1 Me. Total 56.

*Primarily for Graduates :—*

- 13<sup>h</sup> hf. Professor WAMBAUGH. — A General View of Insurance.  
6 Se., 1 Sp., 2 Sc. Total 9.
- 13<sup>h</sup> hf. Asst. Professor CARVER. — Methods of Economic Investigation.  
4 Gr., 6 Se. Total 10.
- 120<sup>d</sup> hf. Professor TAUSSIG. — Adam Smith and Ricardo.  
7 Gr., 5 Se. Total 12.

## THE SEMINARY IN ECONOMICS.

The results of investigations pursued in connection with Courses 20a, 20b, 20c, and 20e were presented and discussed. 8 Gr., 2 Se. Total 10.

**Philosophy.***Primarily for Undergraduates:—*

- 1a. Professor MÜNSTERBERG and Dr. MILLER, assisted by Dr. B. RAND.—  
General Introduction to Philosophy. Psychology. Logic.  
1 Gr., 6 Se., 51 Ju., 83 So., 28 Fr., 18 Sp., 26 Sc. Total 208.
- 1b. Professors PALMER and ROYCE, assisted by Dr. B. RAND.—  
Outlines of the History of Philosophy, Ancient and Modern.  
3 Gr., 2 Se., 84 Ju., 51 So., 8 Fr., 9 Sp., 4 Sc., 1 Di., 1 Me. Total 163.

*For Undergraduates and Graduates:—*

- 2<sup>h</sup> hf. Dr. MACDOUGALL.—Advanced Psychology.  
6 Gr., 4 Se., 4 Ju., 2 So., 2 Sp. Total 18.
- 14<sup>h</sup> hf. Dr. MACDOUGALL.—Experimental Psychology (elementary laboratory  
course). The psychology of sensation, and of the elementary mental  
processes. 8 Gr., 5 Se., 5 Ju., 1 So., 2 Sp., 1 Sc. Total 23.
4. Professor PALMER.—Ethics. The Theory of Morals, considered construc-  
tively. 15 Gr., 36 Se., 11 Ju., 3 So., 3 Sp., 3 Sc., 3 Di. Total 74.
5. Professor PEABODY and Dr. B. RAND.—The Ethics of the Social Questions.  
The problems of Poor-Relief, the Family, Temperance, and various  
phases of the Labor Question, in the light of ethical theory.  
4 Gr., 55 Se., 25 Ju., 14 So., 5 Sp., 8 Sc., 8 Di. Total 119.
- 10<sup>h</sup> hf. Asst. Professor SANTAYANA.—Aesthetics. The Philosophy of Art, with  
a survey of aesthetic theories.  
4 Gr., 24 Se., 12 Ju., 7 So., 1 Sp., 3 Sc., 1 Law. Total 52.
9. Professor ROYCE.—Metaphysics. The fundamental problems of Theo-  
retical Philosophy. Realism and Idealism; Freedom, Teleology, and  
Theism. 12 Gr., 11 Se., 2 Ju., 1 Sp., 3 Di. Total 29.
- 15<sup>h</sup> hf. Professor ROYCE.—Theory of Knowledge. The Processes of Concep-  
tion, Judgment, and Reasoning. The Relations of Thought and Reality.  
The Elements of Symbolic Logic. 8 Gr., 2 Se., 1 Ju. Total 11.
8. Dr. MILLER.—The Philosophy of Nature, with especial reference to Man's  
place in Nature. The Fundamental Conceptions of Science; the rela-  
tion of Mind and Body; Evolution.  
2 Gr., 3 Se., 3 Ju., 2 So., 1 Sc., 1 Di. Total 12.
12. Asst. Professor SANTAYANA.—Greek Philosophy, with especial reference  
to Plato. 2 Gr., 13 Se., 12 Ju., 2 So., 2 Sp. Total 31.
- 11<sup>h</sup> hf. Dr. MILLER.—Descartes, Spinoza, and Leibnitz.  
5 Gr., 9 Se., 1 Ju. Total 15.
- 11<sup>h</sup> hf. Dr. MILLER.—The History of English Philosophy from Locke to Hume.  
2 Gr., 6 Se., 3 Ju., 1 Sp. Total 12.
- 8<sup>h</sup> hf. Dr. W. H. SHELDON.—The Philosophy of Kant. Kant's Critique of  
Pure Reason. 2 Gr., 2 Se., 2 Ju., 1 So., 1 Sp. Total 8.

## SEMINARY COURSES.

*Primarily for Graduates:—*

- ‡20a. Professor MÜNSTERBERG and Dr. MACDOUGALL.—Psychological Laboratory. Experimental investigations. 15 Gr., 4 Se. Total 19.
- 20b. Professor MÜNSTERBERG.—Psychological Seminary. Problems of Comparative and Social Psychology. 21 Gr., 2 Se., 1 Me. Total 24.
- ‡20c. Professor ROYCE.—Metaphysical Seminary. The Problems of Logic. Studies of various fundamental conceptions of Philosophy and of Science. 4 Gr., 1 Me., 1 Instr., 1 R. Total 7.
- ‡20d. Professor PALMER.—Ethical Seminary. The Ethics of Idealism. The Development of German Ethics in Kant, Fichte, and Hegel. 5 Gr., 1 Se. Total 6.
- 20e. Professor PEABODY.—Sociological Seminary. The Christian doctrine of the Social Order. 1 Se., 10 Di., 1 Law. Total 12.
- 20f. Asst. Professor SANTAYANA.—Aesthetical Seminary. Pleasure and pain, the emotions and the aesthetic feelings. 4 Gr., 1 Se. Total 5.
- 20h. Asst. Professor SANTAYANA.—Studies in Aristotle's Metaphysics. 1 Gr. Total 1.

## Education.

*For Undergraduates and Graduates:—*

1. Mr. A. O. NORTON.—The History of Educational Theories and Practices. 7 Gr., 6 Se., 7 Ju., 5 So., 1 Sp., 7 Sc. Total 33.
- 2<sup>1</sup> h<sup>f</sup> Asst. Professor HANUS.—Introduction to Educational Theory. Discussion of Educational Principles. 8 Gr., 18 Se., 6 Ju., 3 So., 8 Sc. Total 43.

*Primarily for Graduates:—*

- ‡3. Asst. Professor HANUS, assisted by Mr. A. O. NORTON.—Organization and Management of Public Schools and Academies. Supervision, Courses of Study, and Instruction. Visits to schools. 16 Gr., 7 Se., 3 Sc. Total 26.
- ‡4<sup>2</sup> h<sup>f</sup>. Asst. Professor HANUS.—The School Systems of England, France, and Germany. 5 Gr., 2 Se., 1 Ju., 1 Sp., 1 Sc. Total 10.
- ‡10a<sup>3</sup> h<sup>f</sup>. Asst. Professor C. P. PARKER.—The Methods and Equipment of a Teacher of the Classics in Secondary Schools. 1 Gr., 4 Se., 2 Ju., 2 R. Total 9.
- ‡10b<sup>2</sup> h<sup>f</sup>. Dr. BIERWIRTH.—The Methods and Equipment of a Teacher of German in Secondary Schools. 3 Se., 1 R. Total 4.
- ‡20a. Asst. Professor HANUS.—Pedagogical Seminary. Contemporary Problems in Education. 12 Gr. Total 12.

## The Fine Arts.

*Primarily for Undergraduates:—*

1. Professor CHARLES H. MOORE, assisted by Mr. MOWER.—Principles of Delineation, Color, and Chiaroscuro, with some consideration of historic forms of art, and the conditions which have influenced them. 3 Se., 4 Ju., 13 So., 16 Fr., 6 Sp., 15 Sc., 6 Bu. Total 63.

2. Professor CHARLES H. MOORE. — Principles of Design in Architecture, Sculpture, and Painting, as exemplified in the Arts of past ages.  
1 Gr., 2 Se., 4 Ju., 1 So., 2 Sp., 5 Sc., 2 Bu. Total 17.

*For Undergraduates and Graduates:—*

3. Mr. EDWARD ROBINSON, assisted by Mr. VON MACH. — The History of Greek Art, with an introduction on the Arts of Egypt, Assyria, and Phoenicia, in their relation to Greek Art.  
6 Gr., 86 Se., 121 Ju., 121 So., 11 Fr., 13 Sp., 29 Sc. Total 387.
4. Professor CHARLES H. MOORE. — The Fine Arts of the Middle Ages and the Renaissance.  
2 Gr., 63 Se., 60 Ju., 43 So., 2 Fr., 5 Sp., 16 Sc., 1 Law. Total 192.

**Architecture.**

*The courses in Architecture are intended primarily for students in the Lawrence Scientific School, and only Courses Ia, Ib, and Ic may be counted towards the degree of A.B.*

- 1a. Professor H. L. WARREN. — Technical and Historical Development of the Ancient Styles, with especial reference to Classic Architecture.  
1 Gr., 2 Se., 7 Ju., 6 So., 1 Sp., 11 Sc., 3 Bu. Total 31.
- 1b. Professor H. L. WARREN. — Technical and Historical Development of the Mediaeval Styles of Architecture. 8 Se., 1 Ju., 13 Sc. Total 22.
- 2a. Professor H. L. WARREN, and Messrs. NEWTON and SWAN. — Elementary Architectural Drawing. The Orders.  
2 Ju., 1 So., 10 Sc., 4 Bu. Total 17.
- 3a. Professor H. L. WARREN and Mr. NEWTON, assisted by Mr. SWAN. — Free-hand Drawing. 2 Ju., 1 Sp., 8 Sc., 2 Bu. Total 13.
- 3b. Professor H. L. WARREN and Mr. NEWTON, assisted by Mr. SWAN. — Free-hand Drawing (second course). 1 Gr., 6 Sc. Total 7.
- 3c. Professor H. L. WARREN and Mr. NEWTON. — Freehand Drawing (third course). 7 Sc. Total 7.
- 4a. Professor H. L. WARREN and Mr. NEWTON, assisted by Mr. SWAN. — Elementary Architectural Design. 1 Gr., 9 Sc. Total 10.
- 4b. Professor H. L. WARREN and Mr. NEWTON. — Architectural Design (second course). 6 Sc. Total 6.
- 4c. Professor H. L. WARREN and Mr. NEWTON. — Architectural Design (advanced course). 5 Sc. Total 5.
- 5<sup>h</sup>f. Mr. NEWTON. — Building Construction: Carpentry.  
1 Ju., 12 Sc. Total 13.
- 6<sup>h</sup>f. Mr. GARBUTT. — Modelling. 1 Gr., 9 Sc. Total 10.
- 7<sup>h</sup>f. Dr. ROSS. — Theory of Design. Pure Design (balance, rhythm, harmony). 1 Gr., 3 Se., 1 Ju., 2 So., 7 Sc. Total 14.

**Landscape Architecture.**

1. Mr. OLMSTED (with occasional lectures by Professor SHALER).—History and Principles of Landscape Design.  
12 Se., 4 Ju., 2 So., 2 Sp., 14 Sc., 2 Bu. Total 36.
2. Messrs. OLMSTED and SHURTLEFF.—Practice in Landscape Design (first course).  
4 Sc., 2 Bu. Total 6.

**Music.***For Undergraduates and Graduates:—*

1. Mr. SPALDING.—Harmony.  
4 Se., 7 Ju., 4 So., 11 Fr., 1 Sp., 4 Sc. Total 31.
2. Mr. SPALDING.—Advanced Harmony. Counterpoint.  
3 Se., 5 Ju., 5 So., 1 Fr. Total 14.
3. Professor PAINE.—History of Music.  
8 Se., 6 Ju., 4 So., 3 Fr., 2 Sp., 1 Sc. Total 24.
- 4 *hf.* Mr. SPALDING.—Musical Form, with analysis of the works of the great composers.  
5 Se., 6 Ju., 2 So. Total 13.
7. Professor PAINE and Mr. SPALDING.—Instrumentation.  
3 Se., 1 Ju., 1 So. Total 5.

*Primarily for Graduates:—*

- ‡5. Professor PAINE.—Canon and Fugue. Free Thematic Music.  
1 Se., 1 So. Total 2.
- ‡6. Professor PAINE.—Advanced Canon and Fugue and Free Composition.  
2 Se., 1 So. Total 3.

**Mathematics.***Primarily for Undergraduates:—*

- F. Mr. WHITTEMORE and Mr. J. L. COOLIDGE.—Trigonometry and Plane Analytic Geometry. 4 Se., 2 Ju., 12 So., 60 Fr., 6 Sp., 1 Sc. Total 85.
- A<sup>1</sup> *hf.* Mr. ASHTON.—Logarithms. Plane and Spherical Trigonometry.  
3 Se., 3 Ju., 13 So., 11 Fr., 1 Sp., 2 Sc., 1 Bu. Total 34.
- B<sup>2</sup> *hf.* Mr. ASHTON.—Plane Analytic Geometry (elementary course).  
1 Ju., 3 So., 7 Fr., 3 Sc. Total 14.
- C. Professor BYERLY.—Plane and Solid Analytic Geometry (extended course).  
1 Se., 1 Ju., 6 So., 15 Fr., 1 Sp., 2 Sc. Total 26.
- D<sup>1</sup> *hf.* Mr. J. L. COOLIDGE.—Algebra.  
2 Se., 6 Ju., 11 So., 21 Fr., 2 Sp., 2 Sc. Total 44.
- E<sup>2</sup> *hf.* Dr. BOUTON, and Mr. J. L. COOLIDGE.—Solid Geometry.  
2 Se., 7 Ju., 14 So., 17 Fr., 3 Sp., 19 Sc. Total 63.
2. Professor BYERLY, assisted by Mr. ASHTON.—Differential and Integral Calculus (first course).  
2 Gr., 3 Se., 10 Ju., 23 So., 3 Fr., 3 Sc. Total 44.
4. Asst. Professor OSGOOD.—The Elements of Mechanics.  
4 Gr., 2 Se., 5 Ju., 3 So., 2 Sc. Total 16.



*For Undergraduates and Graduates:—*

- 1<sup>1</sup> *hf.* Mr. WHITTEMORE. — Theory of Equations.  
3 Gr., 2 Se., 1 Ju., 1 So., 2 Sc. Total 9.
3. Dr. BOUTON. — Modern Methods in Geometry. Determinants.  
2 Gr., 2 Se., 3 Ju., 2 So. Total 9.
5. Mr. WHITTEMORE. — Differential and Integral Calculus (second course).  
7 Gr., 2 Se., 7 Ju., 5 So., 1 Sc. Total 22.
- 12<sup>1</sup> *hf.* Asst. Professor OSGOOD. — Infinite Series and Products.  
1 Gr., 1 Se. Total 2.
- 14<sup>b</sup> *hf.* Asst. Professor OSGOOD. — Algebra. Galois's Theory of Equations.  
7 Gr., 2 Se. Total 9.

*Primarily for Graduates:—*

- †18. Dr. BOUTON. — The Theory of Functions (introductory course).  
3 Gr., 1 Se., 1 R. Total 5.
- †7b. Professor J. M. PEIRCE. — The Theory of Tetrahedral Coördinates, with its applications to the study of points, lines, planes, and quadric surfaces.  
1 Gr. Total 1.
- †28. Mr. J. L. COOLIDGE. — The Geometry of Position. 2 Gr. Total 2.
- †23. Mr. WHITTEMORE. — Introduction to the Differential Geometry of Twisted Curves and Surfaces. 6 Gr., 1 Se., 1 Instr. Total 8.
9. Professor J. M. PEIRCE. — The Calculus of Quaternions (second course), including the study by Quaternions of the Dynamics of Particles and Rigid Bodies. 4 Gr. Total 4.
- †10. Professor BYERLY. — Trigonometric Series. Introduction to Spherical Harmonics. The Potential Function. 6 Gr., 2 Se., 1 Sc., 1 R. Total 10.
- †15. Dr. BOUTON. — Differential Equations, with an introduction to Lie's Theory of Continuous Groups. 5 Gr., 1 R. Total 6.
- †16. Asst. Professor OSGOOD. — The Calculus of Variations. 4 Gr. Total 4.
- †23<sup>1</sup> *hf.* Professor J. M. PEIRCE. — Quaternion Imaginaries and other selected topics in Quaternions. 2 Gr. Total 2.
- †21<sup>2</sup> *hf.* Professor J. M. PEIRCE. — Linear Associative Algebra. 2 Gr. Total 2.

## COURSES IN READING AND RESEARCH.

- †20b. Professor ASAPH HALL (U. S. Navy). — Selected topics in Celestial Mechanics. 2 Gr. Total 2.
- †20e. Asst. Professor OSGOOD. — Selected topics in Higher Analysis. 1 Gr. Total 1.
- †0g. Dr. BOUTON. — Selected topics in the Theory of Continuous Groups. 1 Gr. Total 1.

**Astronomy.***Primarily for Undergraduates:—*

- 1<sup>1</sup> *hf.* Asst. Professor WILLSON and Mr. J. F. COLE. — Descriptive Astronomy.  
11 Se., 23 Ju., 18 So., 1 Fr., 9 Sc. Total 57.

- 2<sup>h</sup> *hf.* Asst. Professor WILLSON and Mr. J. F. COLE. — Practical Astronomy.  
Application of Astronomy to Navigation and Exploration.  
3 Se., 5 Ju., 6 So., 1 Sp., 2 Sc. Total 17.

*For Undergraduates and Graduates : —*

8. Asst. Professor WILLSON. — Practical Astronomy. 1 Gr., 1 Ju. Total 2.  
4. Professor ASAPH HALL (U. S. Navy). — Spherical Astronomy. Theory of  
Eclipses. 2 Gr. Total 2.

### Engineering.

*The courses in Engineering are intended primarily for students in the  
Lawrence Scientific School, but many of them are counted towards the degree  
of A.B. The Catalogue shows what courses may be so counted.*

- 1a<sup>1</sup> *hf.* Messrs. LOVE, ASHTON, FRIZELL, and BROWN. — Advanced Algebra.  
1 Se., 1 Ju., 3 So., 6 Fr., 3 Sp., 133 Sc. Total 147.  
1b<sup>1</sup> and <sup>2</sup> *hf.* Messrs. LOVE, ASHTON, FRIZELL, and BROWN. — Trigonometry.  
2 So., 1 Fr., 122 Sc., 3 Bu. Total 128.  
1d<sup>2</sup> *hf.* Messrs. LOVE, ASHTON, FRIZELL, and BROWN. — Analytic Geometry.  
3 Se., 2 Ju., 7 So., 5 Fr., 105 Sc. Total 122.  
1c. Messrs. LOVE and ASHTON. — Differential and Integral Calculus.  
1 Se., 4 Ju., 4 So., 65 Sc. Total 74.  
1f<sup>1</sup> *hf.* Mr. LOVE. — Integral Calculus and Differential Equations.  
7 Sc. Total 7.  
3a. Messrs. KENNEDY, MOYER, and JONES. — Mechanical Drawing.  
2 Gr., 3 Se., 6 Ju., 14 So., 20 Fr., 116 Sc. Total 161.  
3b<sup>1</sup> *hf.* Mr. MOSES. — Descriptive Geometry.  
2 Se., 3 Ju., 2 So., 59 Sc. Total 66.  
3d<sup>2</sup> *hf.* Mr. MOSES. — Mechanism. Study of Gearing and Mechanical Move-  
ments. 1 Se., 3 Ju., 2 So., 50 Sc. Total 56.  
3e<sup>2</sup> *hf.* Mr. MOSES. — Stereotomy, Shades, Shadows, and Perspective.  
1 Gr., 9 Sc. Total 10.  
4a. Mr. TURNER. — Plane Surveying. (See page 81.)  
4c. Mr. TURNER. — Geodetic Surveying. (See page 81.)  
4d. Mr. TURNER. — Railroad Surveying. (See page 81.)  
10a. Asst. Professor W. S. BURKE. — Chipping, filing and fitting. (See page 81.)  
10b. Asst. Professor W. S. BURKE. — Blacksmithing. (See page 81.)  
10c. Asst. Professor BURKE. — Pattern-making and Foundry Practice.  
(See also page 81.) 1 Gr., 13 Sc. Total 14.  
10e. Asst. Professor BURKE. — Machine Shop Practice.  
(See also page 81.) 1 Gr., 11 Sc. Total 12.

*For Undergraduates and Graduates : —*

- 5b<sup>1</sup> *hf.* Asst. Professor JOHNSON and Mr. MOYER. — Elementary Statics.  
Graphic and Algebraic Methods.  
5 Se., 7 Ju., 3 So., 1 Fr., 76 Sc. Total 92.

- 5d<sup>2</sup> *hf.* Asst. Professor JOHNSON and Mr. MOYER. — Resistance of Materials (introductory course). Elementary Structural Design.  
2 Gr., 4 Se., 7 Ju., 2 So., 60 Sc. Total 75.
- 5a. Professor HOLLIS and Mr. HUGHES. — Applied Mechanics, including Elementary Kinetics. 1 Gr., 1 Se., 2 Ju., 1 So., 43 Sc. Total 48.
- 5c<sup>1</sup> *hf.* Professor HOLLIS. — Resistance of Materials (second course).  
1 Se., 31 Sc. Total 32.
- 6a<sup>8</sup> *hf.* Mr. KENNEDY. — Hydraulics and Hydraulic Motors.  
3 Se., 1 So., 31 Sc. Total 35.
- 6c<sup>1</sup> *hf.* Mr. FLINN. — Water Supply and Sanitary Engineering.  
18 Sc. Total 18.
- 6d<sup>2</sup> *hf.* Asst. Professor JOHNSON and Mr. MEAD. — Canals, Rivers, and Irrigation.  
17 Sc. Total 17.
- 7a. Asst. Professor JOHNSON. — Bridges and Buildings. Graphical Statics. Details of iron and steel construction. 1 Gr., 15 Sc. Total 16.
- 8a<sup>2</sup> *hf.* Asst. Professor JOHNSON. — Masonry and Foundations.  
2 Se., 18 Sc., 1 Bu. Total 21.
- 11a<sup>2</sup> *hf.* Asst. Professor MARKS. — Machinery and Boilers.  
1 Gr., 3 Se., 8 Ju., 1 So., 1 Sp., 78 Sc. Total 92.
- 12b<sup>1</sup> *hf.* Asst. Professor MARKS. — Elements of Thermodynamics. Theory of Heat Engines. 2 Se., 1 So., 28 Sc. Total 31.
- 12a<sup>1</sup> *hf.* Asst. Professor MARKS. — Efficiency and Economics of Engines and Boilers. 10 Sc. Total 10.
- 12c<sup>2</sup> *hf.* Asst. Professor BURKE. — Heating and Ventilation. 18 Sc. Total 18.
- 13a. Asst. Professor MARKS and Mr. HUGHES. — Engineering Laboratory. Introductory course in experimental methods.  
3 Se., 2 Ju., 1 So., 36 Sc. Total 42.
- 13b. Asst. Professor MARKS. — Engineering Laboratory (second course).  
8 Sc. Total 8.
- 14a<sup>1</sup> *hf.* Mr. MOSES. — Machine Design (introductory course).  
3 Se., 30 Sc. Total 33.
- 14b. Professor HOLLIS and Mr. KENNEDY. — Machine Design (second course).  
8 Sc. Total 8.
- 15a. Professor HOLLIS. — Marine Engines and Boilers.  
3 Gr., 1 Se., 1 Sc. Total 5.
- 16a<sup>1</sup> *hf.* Asst. Professor ADAMS and Mr. WHITING. — Industrial Applications of Electricity, with special reference to Dynamo-Electric Machinery.  
4 Gr., 2 Se., 1 Ju., 1 So., 62 Sc. Total 70.
- 17a<sup>2</sup> *hf.* Asst. Professor ADAMS and Mr. WHITING. — The Electrical Transmission and Distribution of Power.  
3 Gr., 4 Se., 1 Ju., 1 So., 51 Sc. Total 60.
- 16c. Asst. Professor ADAMS and Mr. WHITING. — Alternating Currents and Alternating Current Machinery. 2 Gr., 1 Se., 7 Sc. Total 10.

16d. Asst. Professor ADAMS. — Dynamo Design.	7 Sc.	Total 7.
16f. Mr. WHITING. — Electrical Engineering Laboratory.	8 Sc.	Total 8.
18a <sup>2</sup> hf. Asst. Professor BURKE. — Metallurgy.	1 Se., 2 So., 26 Sc.	Total 29.
21. Professor HOLLIS. — Conference on Engineering Subjects.	30 Sc.	Total 30.
22 <sup>3</sup> hf. Asst. Professor WESTENGARD. — Contracts and Specifications. The Principles of Common Law as applied to Contracts.		
	1 Gr., 1 Se., 42 Sc.	Total 44.

### Physics.

#### Primarily for Undergraduates :—

B hf. Professor E. H. HALL and Mr. ANDEREGG. — Experimental Physics (elementary course).	2 Ju., 31 So., 42 Fr., 10 Sp., 65 Sc.	Total 150.
C. Asst. Professor SABINE and Dr. McELFRESH. — Experimental Physics. Mechanics, Sound, Light, Magnetism, and Electricity.	3 Gr., 7 Se., 15 Ju., 17 So., 16 Fr., 6 Sp., 63 Sc.	Total 127.
1. Professor E. H. HALL and Mr. MCKAY. — General Descriptive Physics.	3 Gr., 6 Ju., 10 So., 16 Fr., 1 Sp., 41 Sc.	Total 80.

#### For Undergraduates and Graduates :—

2 <sup>1</sup> hf. Asst. Professor SABINE. — The Theory of the Microscope, its accessories, and other optical apparatus used in the study of organisms.	2 Gr., 1 Se., 1 Ju., 2 Sc.	Total 6.
3. Mr. AYRES. — Electrostatics, Electrokinematics, and parts of Electromagnetism.	4 Gr., 2 Se., 1 Ju., 2 So., 10 Sc.	Total 19.
4. Professor TROWBRIDGE, Asst. Professor SABINE, and Dr. T. LYMAN. — Electrodynamics, Magnetism, and Electromagnetism.	2 Gr., 1 Ju., 1 So., 8 Sc.	Total 12.
5. Asst. Professor SABINE. — Lectures and laboratory work in Thermometry and Physical Optics.	4 Gr.	Total 4.
6 <sup>1</sup> hf. Professor E. H. HALL. — Elements of Thermodynamics.	4 Gr.	Total 4.
6 <sup>2</sup> hf. Professor E. H. HALL. — Modern Developments of Thermodynamics.	4 Gr., 1 Se.	Total 5.

#### Primarily for Graduates :—

7 hf. Professor E. H. HALL. — The Theory of Probability and the Kinetic Theory of Gases.	4 Gr., 1 Sc.	Total 5.
8. Professor TROWBRIDGE. — Electrodynamics, with special reference to Periodic Currents.	2 Gr.	Total 2.

### COURSES OF RESEARCH.

20a. Professor TROWBRIDGE. — Light and Electricity.	3 Gr., 1 Se.	Total 4.
20b. Asst. Professor SABINE. — Electricity and Magnetism.	2 Instr.	Total 2.
20c. Professor E. H. HALL. — Heat and Electricity.	1 Gr.	Total 1.

## Chemistry.

*Primarily for Undergraduates:—*

- B. DR. TORREY and Messrs. BLACK and McADAM.**—Experimental Chemistry.  
1 Gr., 2 Se., 8 Ju., 10 So., 29 Fr., 5 Sp., 6 Sc. Total 61.
- 1. Professor C. L. JACKSON, Mr. CALHANE, and Messrs. ARCHIBALD, DAVIS, FISKE, MARK, and ROOT.**—Descriptive Inorganic Chemistry.  
2 Gr., 9 Se., 24 Ju., 62 So., 59 Fr., 13 Sp., 133 Sc. Total 302
- 2<sup>1</sup> hf. Dr. TORREY.**—Organic Chemistry (elementary course).  
1 Gr., 18 Se., 17 Ju., 13 So., 2 Fr., 8 Sc. Total 59.
- 3. Asst. Professor SANGER, Mr. MCCARTHY, and Messrs. BONNET, DUNLAP, FISKE, FORBES, MOORE, and STONE.**—Qualitative Analysis.  
1 Gr., 21 Se., 34 Ju., 26 So., 3 Fr., 1 Sp., 39 Sc. Total 125.
- 4. Asst. Professor SANGER and Mr. COFFIN.**—Quantitative Analysis, gravimetric and volumetric.  
1 Gr., 10 Se., 14 Ju., 4 So., 1 Sp., 8 Sc. Total 38.

*For Undergraduates and Graduates:—*

- 8<sup>2</sup> hf. Asst. Professor RICHARDS.**—History of Chemistry and Chemical Theory.  
1 Gr., 10 Se., 13 Ju., 5 So., 2 Fr., 1 Sp., 8 Sc. Total 40.
- 9<sup>1</sup> hf. Asst. Professor RICHARDS and Mr. BISBEE.**—Advanced Quantitative Analysis.  
7 Gr., 3 Se., 2 Ju., 4 Sc. Total 16.
- 10<sup>2</sup> hf. Asst. Professor RICHARDS and Mr. BISBEE.**—Gas Analysis.  
4 Gr., 4 Se., 2 Ju., 5 Sc. Total 15.
- 5. Professor H. B. HILL and Mr. HALE.**—The Carbon Compounds.  
6 Gr., 10 Se., 6 Ju., 2 So., 1 Sp., 9 Sc. Total 34.

*Primarily for Graduates:—*

- 6. Asst. Professor RICHARDS and Mr. HEIMROD.**—Physical Chemistry.  
7 Gr., 4 Se., 1 Ju., 4 Sc. Total 16.
- 7<sup>2</sup> hf. Mr. HEIMROD.**—Electrochemistry. 6 Gr., 2 Se., 1 Sc. Total 9.

## COURSES OF RESEARCH.

- 20a. Asst. Professor RICHARDS.**—Inorganic Chemistry, including Determination of Atomic Weights. 2 Gr., 1 Se. Total 3.
- 20b. Professor C. L. JACKSON.**—Organic Chemistry. 4 Gr., 1 Se. Total 5.
- 20c. Professor H. B. HILL.**—Organic Chemistry. 2 Gr. Total 2.
- 20d. Asst. Professor RICHARDS.**—Physical Chemistry. 2 Gr., 1 Se. Total 3.
- 20e. Asst. Professor SANGER.**—Applied Chemistry. 1 Gr., 2 Se., 1 Sc. Total 4.

## Botany.

*Primarily for Undergraduates:—*

- 1<sup>2</sup> hf. Dr. TRUE and Mr. OLIVE.**—Botany (introductory course).  
4 Se., 21 Ju., 32 So., 30 Fr., 7 Sp., 32 Sc., 1 Bu. Total 127.
- 2<sup>1</sup> hf. Asst. Professor THAXTER and two assistants.**—Morphology of Plants.  
7 Gr., 6 Se., 11 Ju., 6 So., 2 Sp., 9 Sc. Total 41.

*For Undergraduates and Graduates :—*

8. Dr. TRUE and Messrs. OLIVE and AMES.—Botany (second course). Morphology, histology (with special reference to the technique of the microscope), and physiology of flowering plants. 5 Gr., 11 Sc. Total 16.

4<sup>h</sup> hf. Asst. Professor THAXTER and one assistant.—Cryptogamic Botany. 3 Gr., 3 Ju., 3 Sc. Total 9.

*Primarily for Graduates :—*

## COURSES OF RESEARCH.

20a. Dr. TRUE.—Structure and Development of Phanerogams. Experimental Vegetable Physiology. Economic Botany, with special reference to *Materia Medica*. 4 Gr., 1 Sc. Total 5.

20b. Asst. Professor THAXTER.—Structure and Development of Cryptogams. 6 Gr. Total 6.

## Zoölogy.

*Primarily for Undergraduates :—*

1<sup>h</sup> hf. Asst. Professor G. H. PARKER, Mr. BREED, and other assistants.—Zoölogy (introductory course). 1 Gr., 10 Se., 20 Ju., 31 So., 25 Fr., 9 Sp., 28 Sc. Total 124.

2<sup>h</sup> hf. Dr. CASTLE, Mr. CRAWLEY, and a second assistant.—Morphology of Animals. 3 Gr., 5 Se., 11 Ju., 10 So., 3 Fr., 3 Sp., 9 Sc. Total 44.

*For Undergraduates and Graduates :—*

8. Dr. H. W. RAND and Mr. ORDWAY.—Comparative Anatomy of Vertebrates. 4 Gr., 3 Se., 3 Ju., 3 So., 5 Sc. Total 18.

4<sup>h</sup> hf. Professor MARK and Dr. H. W. RAND.—Microscopical Anatomy. 2 Gr., 3 Se., 1 So., 2 Sc. Total 8.

5<sup>h</sup> hf. Professor MARK and Dr. H. W. RAND.—Embryology of Vertebrates. 3 Gr., 3 Se., 1 So., 3 Sc. Total 10.

9<sup>h</sup> hf. Asst. Professor R. T. JACKSON.—Fossil Invertebrates. 2 Gr., 1 Sc. Total 3.

10. Dr. CASTLE.—Experimental Morphology. Ontogenesis. 3 Gr. Total 3.

13<sup>h</sup> hf. Asst. Professor G. H. PARKER.—Introduction to the study of the Nervous System. 2 Gr., 1 Se., 3 Sc. Total 6.

16<sup>h</sup> hf. Asst. Professor G. H. PARKER.—The Nervous System and its Terminal Organs. Central Nervous Organs and Terminal Organs of Efferent Nerves. 3 Gr., 1 Se., 4 Sc. Total 8.

*Primarily for Graduates :—*

## COURSE OF RESEARCH.

20a. Professor MARK.—Anatomy and Development of Vertebrates and Invertebrates. 8 Gr., 1 Se., 1 Sc. Total 10.

## Geology and Geography.

*Primarily for Undergraduates:—*

- A<sup>1</sup> hf.* DR. DALY. — Physiography of the Lands.  
2 Gr., 3 Se., 9 Ju., 10 So., 6 Fr., 4 Sp., 37 Sc., 4 Bu. Total 75.
- B<sup>2</sup> hf.* Asst. Professor WARD. — Meteorology (elementary course).  
1 Gr., 2 Se., 9 Ju., 19 So., 20 Fr., 3 Sp., 45 Sc., 6 Bu. Total 105.
- 4 hf.* Professor SHALER and Mr. WOODMAN. — Elementary Geology.  
3 Gr., 19 Se., 47 Ju., 116 So., 188 Fr., 15 Sp., 85 Sc., 1 Law,  
2 Me., 6 Bu. Total 482.
- 5<sup>3</sup> hf.* Mr. J. B. WOODWORTH, assisted by Messrs. WOODMAN and BOYNTON. —  
Elementary Field and Laboratory Geology.  
4 Gr., 8 Se., 11 Ju., 40 So., 29 Fr., 4 Sp., 63 Sc., 4 Bu. Total 168.
- 1<sup>1</sup> hf.* Asst. Professor WARD. — Meteorology (second course).  
4 Se., 2 So., 6 Sc. Total 12.

*For Undergraduates and Graduates:—*

- 6<sup>2</sup> hf.* Professor DAVIS. — Physiography of the United States.  
8 Gr., 5 Se., 2 Ju., 9 Sc. Total 24.
8. Mr. J. B. WOODWORTH, assisted by Mr. J. E. WOODMAN. — General Critical  
Geology. 2 Gr., 3 Se., 4 Ju., 2 So., 8 Sc. Total 19.
10. Professor SMYTH. — Mining Geology.  
2 Gr., 8 Se., 2 Ju., 2 So., 15 Sc. Total 29.
22. Dr. JAGGAR. — Advanced Geological Field Work. Areal Geology in the  
vicinity of Boston. 4 Gr., 3 Se., 3 Sc. Total 10.
- 11<sup>2</sup> hf.* DR. DALY. — Oceanography. 1 Gr., 7 Se., 3 Ju., 5 So., 4 Sc. Total 20.
- 17<sup>2</sup> hf.* DR. JAGGAR. — Experimental and Dynamical Geology.  
3 Gr., 1 Ju., 1 Sp., 2 Sc. Total 7.
- 16<sup>1</sup> hf.* Mr. J. B. WOODWORTH, assisted by Mr. BOYNTON. — Glacial Geology.  
8 Se., 1 Ju., 6 Sc. Total 15.
- 27<sup>1</sup> hf.* Professor SMYTH. — Pre-Cambrian Geology of North America, with  
especial reference to the stratigraphy and economics of the rocks in the  
original Laurentian area and the region of the Great Lakes.  
1 Gr., 3 Se., 1 Sc. Total 5.
- 19<sup>1</sup> hf.* Asst. Professor WARD. — General Climatology. 2 Gr., 4 Se. Total 6.
- 25<sup>2</sup> hf.* Asst. Professor WARD. — Special Climatology. 1 Gr., 1 Sp. Total 2.
- 14 hf.* Professor SHALER and Asst. Professor R. T. JACKSON, assisted by Mr.  
STONE. — General Palaeontology.  
1 Gr., 15 Se., 17 Ju., 9 So., 1 Fr., 17 Sc. Total 60.
- 14a hf.* Asst. Professor R. T. JACKSON, assisted by Mr. STONE. — General Palae-  
ontology. 3 Se., 1 So., 1 Fr., 7 Sc. Total 12.
15. Professor SHALER and Asst. Professor R. T. JACKSON. — Historical Geology.  
1 Gr., 1 Se. Total 2.
- 18<sup>1</sup> hf.* Professors SHALER and SMYTH. — Economic Geology. Non-metalliferous  
products and water supply. 3 Gr., 6 Se., 9 Sc. Total 18.

*Primarily for Graduates :—*

## COURSES OF RESEARCH.

- 20 Professor DAVIS.—Physiography (advanced course). 4 Gr. Total 4
23. Professors SHALEK, DAVIS, and SMYTH, Mr. J. B. WOODWORTH, and Dr. JAGGAR.—Geological Investigation in the Field and Laboratory. 2 Gr., 1 Sc. Total 3.
24. Professor SHALEK and Asst. Professor R. T. JACKSON.—Advanced Palaeontology. 1 Gr. Total 1.

**Mineralogy and Petrography.***Primarily for Undergraduates :—*

2. Professor WOLFF, Drs. PALACHE and LORD.—Mineralogy. 3 Gr., 6 Se., 9 Ju., 7 So., 22 Sc. Total 47.
- 3 *hf.* Professor WOLFF.—Building Stones (course for students of Architecture). 1 Gr., 1 So., 30 Sc. Total 32.

*For Undergraduates and Graduates :—*

- 7<sup>1</sup> *hf.* Dr. PALACHE.—Crystallography. 2 Se., 1 Ju. Total 3.
- 8<sup>2</sup> *hf.* Professor WOLFF and Dr. PALACHE.—Physical Crystallography (mainly Optical Mineralogy and its applications). 2 Gr., 2 Se., 2 Ju. Total 6.
12. Professor WOLFF and Dr. LORD.—Petrography. 5 Se., 2 Ju., 4 Sc. Total 11.

*Primarily for Graduates :—*

## COURSE OF RESEARCH.

20. Professor WOLFF and Dr. PALACHE.—Mineralogical and Petrographical Research. 2 Gr. Total 2.

**Mining and Metallurgy.***For Undergraduates and Graduates :—*

- 1<sup>2</sup> *hf.* Professor SMYTH.—Mining. Prospecting and exploring; sampling, and the principles of exploitation. 2 Gr., 6 Se., 2 Ju., 2 So., 15 Sc. Total 27.
- 2<sup>1</sup> *hf.* Mr. SAUVEUR.—Metallurgy of iron and steel. 1 Gr., 9 Se., 1 Ju., 1 So., 15 Sc. Total 27.
- 3<sup>2</sup> *hf.* Mr. RAYMER.—Metallurgy of copper, nickel, lead, zinc, and the minor metals. 2 Gr., 4 Se., 3 Ju., 1 So., 11 Sc. Total 21.
4. Mr. RAYMER.—Ore-dressing, Concentration, and Milling. 3 Gr., 1 Se., 9 Sc. Total 13.
- 5<sup>1</sup> *hf.* Professor SMYTH.—Mining. Metal and coal mining; exploitation. 3 Gr., 2 Se., 7 Sc. Total 12.
- 11<sup>2</sup> *hf.* Mr. RAYMER.—Mining Plant. 2 Gr., 2 Se., 6 Sc. Total 10.
- 6<sup>1</sup> and 2 *hf.* Mr. WHITE.—Metallurgical Chemistry. 3 Se., 10 Sc. Total 13.
7. Mr. WHITE.—Metallurgical Chemistry (advanced course). 2 Gr., 1 Se., 1 Sc. Total 4.
- 10<sup>1</sup> *hf.* Mr. RAYMER.—Fire Assaying. 2 Gr., 2 Se., 1 Ju., 8 Sc. Total 13.

*Primarily for Graduates :—*

## COURSE OF RESEARCH.

20. Mr. SAUVEUR.—Metallography and the Physics of Metals. 2 Sc. Total 2.



**American Archaeology and Ethnology.***For Undergraduates and Graduates: —*

1. Dr. RUSSELL. — General Anthropology. Somatology. Prehistoric Archaeology of Europe and America. Ethnology.  
2 Gr., 6 Se., 5 Ju., 5 So., 1 Fr., 1 Sc. Total 20.

*Primarily for Graduates: —*

- 3<sup>d</sup> *hf.* Dr. J. H. WOODS. — Primitive Religions. Theories of origin, animism, totemism, fetishism, ceremonial, symbolism, comparative mythology, and folklore.  
2 Se., 2 Ju., 2 Sc., 1 R. Total 7.
- 4<sup>1</sup> *hf.* Dr. RUSSELL. — Prehistoric Archaeology; European Ethnology.  
2 Gr., 6 Se., 1 Sc., 1 Me. Total 10.
- 5<sup>2</sup> *hf.* Dr. RUSSELL. — American Archaeology and Ethnology. 3 Gr. Total 3.

**COURSES OF SPECIAL STUDY.**

- 20a. Professor PUTNAM. — American Archaeology and Ethnology.  
3 Gr. Total 3.
- 20b. Dr. RUSSELL. — Advanced Somatology. 1 Gr., 1 Se. Total 2.

**Anatomy, Physiology, and Hygiene.**

1. Dr. DARLING, Dr. PROVANDIE, and Dr. BACON. — Elementary Anatomy and Physiology. Personal Hygiene. Emergencies.  
1 Gr., 16 Se., 29 Ju., 31 So., 5 Fr., 2 Sp., 15 Sc., 1 Law. Total 100.
- 4<sup>1</sup> *hf.* Dr. D. A. SARGENT. — Anthropometry. 1 Gr., 11 Sc. Total 12.
- 5<sup>2</sup> *hf.* Dr. D. A. SARGENT. — Applied Anatomy and Animal Mechanics.  
1 Gr., 8 Sc. Total 9.


*Instruction by Doctors of Philosophy.*

The following course was given in accordance with a vote of the President and Fellows, empowering the Faculty to authorize any Doctor of Philosophy or of Science who has been approved by the Department with which his work is most closely related, to give instruction for a period not exceeding four months, either gratuitously or for such fees as he may himself fix and collect: —

Dr. H. H. BROWN. — Electrical Conduction in Gases.

*Summer Courses of Instruction, 1901.*

The following is a list of the courses of instruction given during the summer of 1901 under the direction of the Faculty, with an enumeration and classification of the students taking each course. The same abbreviations are used as in the foregoing table, with the addition of the abbreviations S.S. for members of the Harvard

Summer School, and Cu. for member of the Summer School for Cubans, who were otherwise unconnected with the University. The index  denotes courses which may be offered to count towards a degree.

#### Greek.

- I. Dr. G. H. CHASE. — Greek for Beginners. 5 times a week, for 6 weeks.  
1 Sp., 4 R., 7 S.S. Total 12.

#### Latin.

- I. Dr. H. W. PRESCOTT. — Latin for Teachers in the Secondary Schools.  
5 times a week, for 6 weeks. 30 S. S. Total 30.

#### English.

- A. Asst. Professor HURLBUT, assisted by Messrs. F. W. C. HERSEY and F. W. REYNOLDS. — English Composition (elementary course). 5 times a week, for 6 weeks. 75 S. S. Total 75.
- B. Dr. MAYNADIER, assisted by Mr. F. W. C. HERSEY. — English Composition (advanced course). 5 times a week, for 6 weeks. 36 S. S. Total 36.
- C. Mr. P. LA ROSE. — English Composition (second advanced course). 5 times a week, for 6 weeks. 6 S. S. Total 6.
- Dr. SCHOFIELD. — Anglo-Saxon. Anglo-Saxon Reader and Grammar. 5 times a week, for 6 weeks. 1 Sp., 6 S. S. Total 7.
- Dr. W. A. NEILSON. — Shakspeare. 5 times a week, for 6 weeks.  
13 S. S. Total 13.
- Mr. HURLBUT, assisted by Mr. F. W. REYNOLDS. — English Literature of the Eighteenth Century. 5 times a week, for 6 weeks. 20 S. S. Total 20.
- Dr. W. A. NEILSON. — English Literature in Outline, from Anglo-Saxon Times to the Present. 5 times a week, for 6 weeks. 23 S. S., 5 Cu. Total 28.
- Mr. I. L. WINTER. — Public Speaking and Reading. Course for teachers of reading and public speaking, and for teachers of English. 5 times a week, for 6 weeks. 13 S. S., 1 Gr. Total 14.

#### German.

- I. Dr. J. F. COAR. — Composition and Conversation. 5 times a week, for 6 weeks. 18 S. S. Total 18.
- II. Mr. W. G. HOWARD. — German Literature of the Classic Period. 5 times a week, for 6 weeks. 2 S. S. Total 2.

#### French.

- I. Mr. C. H. C. WRIGHT. — Introductory Course. Grammar, reading, and translation. 5 times a week, for 6 weeks. 5 S. S., 1 L. Total 6.
- II. Asst. Professor MARCOU. — Advanced Course. Literature, reading, and composition. 5 times a week, for 6 weeks. 5 S. S. Total 5.

#### Spanish.

- I. Dr. FORD. — Introductory Course. Grammar, composition, and translation. 5 times a week, for 6 weeks. 8 S. S., 1 R. Total 9.

**History and Government.**

- I. Dr. BOTSFORD. — Greek History. Lectures (5 times a week, for 5 weeks); research, conferences, and written work (1 week). 13 S. S. Total 13.
- II. Dr. A. L. CROSS. — English History. 28 lectures, supplemented by written exercises. 11 S. S. Total 11.
- III. Professor HART and Dr. A. L. CROSS. — American History. Lectures and training in the use of materials, and in the application of the laboratory method of study. 25 lectures, supplemented by 4 pieces of written work. 26 S. S. Total 26.
- IV. Professor LOWELL and Mr. J. P. WARREN. — Civil Government. Lectures, reading, and reports. 5 times a week, for 6 weeks. 11 S. S. Total 11.

**Psychology.**

- I. Dr. MACDOUGALL. — The Psychology of the senses and the development of voluntary motor ability. 5 times a week, for 6 weeks. 18 S. S. Total 18.
- II. Dr. MACDOUGALL. — Experimental investigations in the field of sensory and motor activity. 5 times a week, for 6 weeks. 13 S. S. Total 13.

**Education.**

- I. Asst. Professor HANUS. — General Principles of Education. Courses of study; organization and administration of schools and school systems. 25 lectures, supplemented by written work and thesis. 39 S. S., 1 Cu. Total 40.
- II. Mr. A. O. NORTON. — History of Educational Aims and Principles from antiquity to the present time. 25 lectures, supplemented by reading and reports. 11 S. S. Total 11.

**Theory of Design.**

- Dr. D. W. ROSS and assistants. — Lectures, with experimental practice, for designers, for teachers of Design, and for teachers of the History of Art. 70 S. S. Total 70.

**Music.**

- I. Mr. W. R. SPALDING. — Grammar and Principles. 5 times a week, for 6 weeks. 7 S. S. Total 7.
- II. Mr. W. R. SPALDING. — General Course. 5 times a week, for 6 weeks. 6 S. S. Total 6.

**Mathematics.**

- SD. Dr. H. H. BROWN. — Advanced Algebra. 5 times a week, for 6 weeks. 3 Ju., 5 S. S. Total 8.
- SE. Mr. ASHTON. — Solid Geometry. 5 times a week, for 6 weeks. 1 So., 2 Ju., 1 Sc., 6 S. S. Total 10.
- SA. Dr. H. H. BROWN. — Plane Trigonometry. 5 times a week, for 6 weeks. 4 Ju., 1 So., 1 Fr., 1 Sp., 5 S. S. Total 12.

SB. Asst. Professor LOVE.—Plane Analytic Geometry. 5 times a week, for 6 weeks. 8 Sc., 8 S. S. Total 16.

S2. Mr. ASHTON.—Differential and Integral Calculus. 5 times a week, for 6 weeks. 1 Ju., 4 Sc., 2 S. S. Total 7.

#### Astronomy.

Asst. Professor WILLSON.—Lectures, laboratory work, and observations. 5 times a week, for 6 weeks. 2 S. S., 1 Gr. Total 2.

#### Physics.

Asst. Professor SABINE, assisted by Mr. W. E. McELFRESH and Professor W. D. COLLINS (Earlham College).—Elementary Physics. 5 times a week, for 6 weeks. 18 S. S. Total 18.

Asst. Professor SABINE and assistants.—Advanced Physics. 5 times a week, for 6 weeks. 1 Ju., 1 Sp., 1 Bu., 15 S. S. Total 18.

#### Chemistry.

Dr. TORREY, assisted by Messrs. HALE, BLACK and CALHANE.—Elementary Theoretical and Descriptive Chemistry. 5 times a week, for 6 weeks. 9 S. S. Total 9.

Dr. TORREY and assistants.—Advanced course in General Chemistry. 5 times a week, for 6 weeks. 3 S. S. Total 3.

Dr. TORREY and assistants.—Elementary Organic Chemistry. 5 times a week, for 6 weeks. 4 S. S. Total 4.

#### Botany.

S1. Mr. OLIVE, Mr. KING, and Mr. DANDENS.—Lectures, laboratory work, and field work. 5 times a week, for 6 weeks. 2 Ju., 2 So., 2 Fr., 1 Sc., 11 S. S. Total 18.

S2. Mr. OLIVE and assistants.—Advanced Course in Morphology, etc. 5 times a week, for 6 weeks. 1 Fr., 18 S. S. Total 9.

#### Geology.

S1. Professor SHALER and Mr. WOODMAN.—Elementary course. Lectures, laboratory, and field work. 5 times a week, for 6 weeks. 1 So., 1 Fr., 3 Sc., 7 S. S. Total 12.

#### Geography.

Mr. H. T. BURR, assisted by Mr. C. H. MORRILL.—Lectures, laboratory, and field work. 5 times a week, for 6 weeks. 1 Sc., 20 S. S. Total 21.

#### Physical Training.

Dr. D. A. SARGENT and assistants.—Elementary and advanced courses in theory and practice. 5 weeks. 1 Sp., 112 S. S., 36 Cu. Total 149.

#### Historical Excursions.

Mr. W. E. DORMAN, assisted by Mr. G. NEWHALL.—Historical Excursions. 3 lectures and 7 excursions.

The following courses were given in the summer as part of the regular instruction of the Lawrence Scientific School:—

**Engineering.**

- 4a. Mr. TURNER. — Plane Surveying. Field work. Daily, 4 weeks.  
1 Gr., 3 Se., 6 Ju., 8 So., 12 Fr., 32 Sc., 1 Bu., 2 S. S. Total 65.
- 4c. Mr. TURNER. — Geodetic Surveying. Daily, 2 weeks.  
1 Gr., 2 Se., 8 Ju., 7 So., 12 Fr., 46 Sc., 1 S. S. Total 77.
- 4d. Mr. TURNER. — Railroad Surveying. Daily, 3 weeks.  
1 Gr., 3 Se., 8 Ju., 8 So., 12 Fr., 46 Sc., 1 S. S. Total 79.
- 10a. Asst. Professor W. S. BURKE. — Chipping, filing, and fitting. Ninety hours.  
2 Ju., 1 Fr., 20 Sc., 3 S. S. Total 26.
- 10b. Asst. Professor W. S. BURKE. — Blacksmithing. Ninety hours.  
2 Ju., 1 Fr., 21 Sc., 2 S. S. Total 26.
- 10c. Asst. Professor BURKE. — Pattern Making, etc. Ninety hours.  
2 Ju., 1 Fr., 22 Sc., 2 S. S. Total 27.
- 10e. Asst. Professor BURKE. — Machine-Shop Practice. Ninety hours.  
2 Ju., 1 Fr., 23 Sc., 3 S. S. Total 29.

*Instruction provided for 1901-02.*

In the list of courses of instruction provided for 1901-02 there were, as usual, numerous changes of detail, especially changes of instructors or in the plan of instruction in some of the courses given regularly every year, and changes due to alteration and rotation among the more advanced courses. In some departments, namely, Romance Languages, History, and Philosophy, there appears a substantial diminution of the amount of instruction, due to the loss or temporary absence of instructors; while a few other departments, notably English and Engineering, show a substantial gain. In the great majority of the departments, however, the amount of instruction is nearly the same as it was in 1900-01, and the total amount offered by the Faculty is not materially changed. The totals for the last four years are as follows:—

1898-99 . . . . .	327½	courses
1899-1900 . . . . .	338	“
1900-01 . . . . .	356	“
1901-02 . . . . .	354½	“

Among the courses announced for the present year, the following deserve special mention as distinct additions to the list:—

*Primarily for Undergraduates:—*

Professors SMITH, M. WARREN, and HOWARD, Asst. Professor C. P. PARKER, and Dr. E. K. RAND. — General View of Latin Poetry.

Dr. BIERWIRTH. — Practice in speaking and writing German. *Hf.*

*For Undergraduates and Graduates:—*

- Asst. Professor ROPEs. — Introduction to the Study of the New Testament. *Hf.*
- Professor KITTREDGE. — Studies in the Sources and History of the English Vocabulary. *Hf.*
- Dr. SCHOFIELD. — The Literary History of England from the Norman Conquest to Chaucer. *Hf.*
- Dr. SCHOFIELD. — The Literary History of England from Chaucer to Elizabeth. *Hf.*
- Professor A. S. HILL and Mr. J. G. HART. — History and Development of English Literature in outline from 1700 to 1900. *Hf.*
- Dr. E. K. RAND. — Latin Bucolic Poetry from Virgil to the Renaissance. *Hf.*
- Asst. Professor WIENER. — Introduction to the History of Russian Literature. *Hf.*
- Dr. FAY. — History of Continental Europe in the Seventeenth Century. *Hf.*
- Mr. WYMAN. — Principles of Law in their applications to Industrial Problems.
- Mr. SPALDING. — Vocal Counterpoint, with analysis of choral works of the great composers. *Hf.*
- Dr. BOUTON. — Elementary Theory of Differential Equations. *Hf.*
- Asst. Professor ADAMS. — Direct Current Dynamo-Electric Machinery. *Hf.*

*Primarily for Graduates:—*

- Asst. Professor GULICK. — The Plays of Euripides.
- Professor M. WARREN. — The Comedies of Terence.
- Dr. E. K. RAND. — Boethius (*Consolatio Philosophiae*). *Hf.*
- Professor H. W. SMYTH. — Greek Grammar (*Syntax*). *Hf.*
- Professor MORGAN. — Isæus and the Greek Laws of Inheritance. *Hf.*
- Professor VON JAGEMANN. — Topics in the History of the German Language (seminary course).
- Professor CHANNING. — The Sources and Literature of American History. *Hf.*
- Professor MÜNSTERBERG. — The Theory of the Will (seminary course).
- Professor PEABODY. — The Ethics of Jesus Christ (seminary course).
- Dr. MILLER. — Ethical Ideals of the Nineteenth Century (seminary course).
- Mr. J. L. COOLIDGE. — Non-Euclidean Geometry.
- Asst. Professor M. BÔCHER. — Introduction to Partial Differential Equations. *Hf.*
- Professor J. M. PEIRCE. — Selected Topics in Quaternions. *Hf.*
- Professor BYERLY. — Picard, *Traité d'Analyse*, I (course of reading and research).
- Mr. J. L. COOLIDGE. — Selected Topics in Projective Geometry (course of reading and research).
- Asst. Professor MARKS. — Heat Engines (course of research).
- Dr. DIXON. — Ethnology of the Pacific Coast of North America. Linguistics. *Hf.*

## THE DEGREE OF BACHELOR OF ARTS.

The most important subject that occupied the attention of the Faculty during the past year was the question of the requirements for the degree of Bachelor of Arts. A communication from the Board of Overseers, received in April, 1900, requesting that there be inserted in the Catalogue a clear statement of the conditions on which the various degrees given in course can be obtained, found the Faculty engaged in an attempt to formulate a statement of our existing requirements, with especial reference to the period of residence, for the degree of Bachelor of Arts. The published statements of the requirements for the other degrees under the charge of the Faculty are believed to be reasonably clear, but those relating to the degree of Bachelor of Arts had become unsatisfactory and inadequate, because they took no cognizance of the growing practice of graduating in three years. On this subject the Faculty had formulated no general rules, but continued to deal with the three-year candidates, who have now become a numerous body, on individual petition. In this way a series of precedents had been established and a policy outlined; but before reducing these to the form of general rules the Faculty deemed it prudent to institute a careful inquiry into the whole subject and ascertain whether it was not feasible to arrive at a better definition of the requirements. The matter was accordingly referred to a Committee which, owing to the press of work incident to the close of the College year, could not begin its investigations until the autumn, and could not conclude them before the publication of the Catalogue for 1900-01. Accordingly no change in the statement of requirements was made in that volume.

The Committee, which consisted of Professors J. M. Peirce, Davis, Briggs, Hall, von Jagemann, Taussig, Morgan, and Hurlbut, with the Dean of the Faculty as Chairman, went into the subject committed to it with great thoroughness, and in April presented an elaborate report. The Committee as constituted was not unanimous on the general question of the expediency of encouraging graduation in three years; but, in accordance with its instructions, it formulated a new definition of requirements for the degree of Bachelor of Arts which it unanimously recommended for adoption 'in case the Faculty deems it expedient at this time to recognize the three years course and to give it a place alongside of the four years course.' The proposed definition failed by a narrow margin to command a

majority of the votes of the Faculty. The matter must, therefore, go over for future consideration. Meanwhile, the Faculty has prepared a statement of its present practice in granting the degree of Bachelor of Arts, which, in compliance with a request of the Board of Overseers, will be published in the Catalogue for 1901-02.

The facts and statistics gathered by the Committee and included in its report to the Faculty are, I think, sufficiently valuable and interesting to warrant me in reproducing them here, as they give a brief history of this vexed question to the present time and an account of the existing situation. The essential portions of them are given in the following paragraphs\* :—

“As a result of the introduction into our admission requirements of studies equivalent to courses taught in college, there has grown up a great variety in the amount as well as in the quality of the preparation with which our students enter on their college work, and, in consequence, in the amount of work to be done in college in fulfillment of the requirements for the Bachelor's degree. About half of the students of every Freshman class have entered with deficiencies in their admission records, amounting in some cases to as much as the equivalent of two or more college courses; and these deficiencies are often most naturally made up by taking the corresponding studies in college. Many, on the other hand, have anticipated one or more college studies; and although a student who has anticipated half the work of the Freshman year may register as a Sophomore, by no means all who have this privilege avail themselves of it. The admissions to advanced standing exhibit an equal variety of individual cases.

“Under these diverse conditions the requirement of work to be done in college has become a variable quantity, and the formulation of specific rules to meet all the cases that may arise is no longer practicable, even if it were desirable. The existing requirement of residence and study for the attainment of the Bachelor's degree is stated in terms applicable to a student who has entered the Freshman class with no deficiencies in his admission record, and with no college work to his credit; and with this fundamental rule and a few supplementary regulations it has been found possible to deal with all other cases. . . .

“For a student with a clear admission record and no college work to his credit, the present requirement of residence and study for the degree of Bachelor of Arts is in substance as follows :—

\* The statistics accompanying the report are given in the Appendix, pp. 309-312.



“ In his Freshman year he must take English A, and other studies amounting to *four*\* courses ;

“ In his Sophomore year he must take elective studies amounting to *four* courses, and in addition, if he has passed in English A with Grade D, an elective half-course in English Composition ;

“ In his Junior and Senior years he must take elective studies amounting to *four* courses each year.

“ The present rules, therefore, contemplate a normal residence of four years, in each of which the student is required to take studies equivalent to four courses, together with such work in English as may be prescribed for him. The total requirement of college work amounts to sixteen courses, together with the prescribed English ; including the prescribed English, it amounts to seventeen or to seventeen and a half courses, as the case may be.

“ In order to be recommended for the degree of Bachelor of Arts the student must have passed in all of the courses which he is required to take, and must, moreover, have attained a grade above D, (1) in at least half of all his college work, and (2) in at least half of the work of his Senior year.

“ It appears, then, that in the case of the normal student contemplated in the rules the total amount of work which he is required to take and the total amount required for the degree are identical. In actual practice, while the amount of work the student is required to take during a given period of residence is fixed by a general regulation, the amount required for the degree varies greatly with the individual. It is increased in the cases of those who enter a class, Freshman or other, with deficiencies which can be best made up by work in college ; it is often diminished, in the cases of those who have anticipated college studies, by the amount of the studies anticipated. For the latter class of cases the Faculty has provided that the number of courses regularly required in the Senior year, or in the Junior and Senior years, may be reduced, but only ‘ for the purpose of enabling the student to devote the time thus gained to his remaining studies or to studies in a professional school.’ The number of students who have asked for a reduction for the first of the two reasons here stated has never been large. The applications for reduction for the purpose of taking studies in a professional school have come mostly from students intending to enter the Law School, the convenient location of which

\* He may take and receive credit in additional studies to the extent of one course in his Freshman year, and of two courses in any subsequent year. He may take studies beyond this limit, but receives no credit in them.

made a combination of undergraduate and professional work practicable. For some years such students were permitted to take, while still registered in the College, enough courses in law to enable them to enter, on graduation, the second-year class of the School. This practice ceased in 1894, when a new rule for admission to the second-year class of the Law School went into effect, requiring that a candidate, besides passing the examinations, must have been a member, for at least one academic year, of another law school. From 1894 until 1900 the desired saving of a year was effected in another way. A considerable number of students asked for leave of absence for their Senior year in order to register as regular first-year students in the Law School; and leave was usually granted if the student's work for the degree of A.B. was so far advanced that the part remaining to be done did not exceed one and a half courses. This practice has now in turn been brought to an end by a recent vote of the Faculty of Law, under which a student is no longer permitted to carry on studies for the degree of A.B. along with the regular studies of the law course; so that this resource for undergraduates not fully occupied in their fourth year with studies required for the degree of A.B. is no longer available. The courses of the Medical School are still open to such students, but the number of those who have undertaken to carry on their medical studies along with their college work has always been very small.

“As a result of the conditions which have been described, and also of the liberty which a student has of taking and receiving credit in studies additional to the amount he is required to take in any year,\* it happens, and must inevitably happen under our system, that a considerable number of students in their fourth year are required to take studies amounting to four courses, but do not need to pass in all of these studies in order to complete the number of courses required for the degree. The difficulty which might have been anticipated of enforcing the requirement of four courses under these circumstances has not proved serious. The disposition of our students in general is to take more work than is required of them, and to get credit for all that they take. In the class of 1900, out of a total of 404 students graduating, 204 had received credit in studies exceeding by from one half-course to six courses the requirement for the degree. Towards the end of every year a number of Seniors ask

\* Including German A or French A, unless he has passed in both Elementary German and Elementary French for admission. For the sake of clearness this is not specifically mentioned in the present statement, . . . since it does not affect the amount and distribution of the student's work . . .

to be excused from taking the final examinations in courses not needed for the degree, and such exemption may often be granted without violating the spirit of the rule. The number of refractory cases which have had to be settled by the Faculty has been exceedingly small.

“ For the attainment of the degree in less than four years from the time of admission to the Freshman class the only provision as yet made by the Faculty in its published announcements refers to students who have anticipated, at the time of their admission, a part of their college work. Such students are informed that they ‘ may obtain leave from the Faculty to fulfil the requirements for the degree in three years by taking additional elective studies under the rules of the Faculty.’ Applications under this rule ‘ will not ordinarily be acted upon until the close of the student’s first year; and the decision upon them will depend upon the quality of the student’s record both in his examination for admission and in his college work.’ In practice, however, the Faculty has not restricted this privilege to the class of students to whom this notice is addressed. By a rule adopted in 1890 any student who by the middle of his Senior year has completed the required work for the degree, is excused, if he so desires, from further residence. In 1891 the Faculty established a standing ‘ Committee on Graduation in Less than Four Years,’ which was charged with the investigation of all applications under this head until 1896, when the Committee was abolished and its functions were transferred to the Administrative Board of Harvard College. Neither the Committee nor the Board was charged with full power in the premises; the Faculty has kept the direct control of the matter in its own hands by voting on each case reported. In the beginning the Faculty exacted a high standard of scholarship — that of the *magna cum laude* degree — of those whom it permitted to graduate in three years; but this requirement was gradually relaxed, and at present scholarship of the grade demanded for a degree *cum laude* is accepted as sufficient. Applicants who have failed to attain this standard but have satisfied all the requirements for the ordinary degree at the end of their Junior year have not, except in a very few cases, received the degree at that time; but the Faculty has not regarded it as reasonable to hold such a student to a fourth year of residence, so that, as a logical result of the situation, the exaction of the *cum laude* standard is not in fact enforced in his case. He suffers the inconvenience of having to wait a year, but he gets an ordinary degree on three years’ residence and study.

“ That the policy thus developed by the Faculty has not yet been formulated in published rules is due to the divergence of views on the question of graduation in three years. In 1890 a measure was adopted, the essential feature of which was the reduction of the amount of college work required for the degree from 18.4 courses, as it was then, to 16 courses; but this measure was opposed by a large and earnest minority of the Faculty and was disapproved by the Board of Overseers. In 1896 the subject was taken up again, and after careful deliberation in committee and long and thorough discussion a more elaborate scheme was adopted; but it passed the Faculty by so narrow a majority that it was carried no farther. Since 1896 the situation has been materially altered by the action of our professional schools in making the Bachelor's degree the regular requirement for admission to candidacy for their own degrees. Up to that year the Divinity School alone had established the rule that candidates for its degree must have received the degree of Bachelor of Arts or have had an equivalent training. In that year a new rule of the Law School went into effect, providing that Bachelors of Arts, Literature, Philosophy, or Science of approved colleges, and ‘ persons qualified to enter the Senior Class of Harvard College,’ should be admitted as candidates for a degree without examination, all others being admitted (by examination) as special students. In 1899 the exception in favor of ‘ persons qualified to enter the Senior Class of Harvard College ’ was withdrawn. In June of the present year a new rule of the Medical School goes into effect, requiring that ‘ candidates for admission must present a degree in Arts, Literature, Philosophy, or Science, from a recognized college or scientific school, with the exception of such persons, of suitable age and attainments, as may be admitted by a special vote of the Faculty in each case.’ The Faculty of Arts and Sciences has more than once discussed propositions looking to the acceptance of a first year of professional study in place of the Senior year of the college course, but these propositions, while favored by many members, have never commanded a majority vote.”

The conclusions of the Committee on the present situation and the measures that should be taken to meet it are expressed in the following words :—

“ There exists at present a demand for a three years college course on the part of a large and increasing number of students, of whom a majority—about two-thirds in the last five years—remain in the University for graduate or professional study. It is desirable that the work required of these students should be such that it can be

performed in a wholesome and profitable manner, without imposing too great a strain either on the students themselves or on the standard of the courses which they take. At the same time a large majority of our students, from preference or by force of tradition, still adhere to the four years course. Without attempting to foretell the results that may come from any new plan that may be adopted, it is safe to say that, if the three years course is to have a recognized place in our academic scheme, it must exist for some years to come alongside of the four years course. Such being the case, it is highly desirable that each of the two courses should stand, as far as possible, on its own intrinsic merits, neither favored nor discriminated against by technical regulations. Each, in its own way, may be expected to have attractions for the serious-minded student, according to his temperament or his circumstances,—the three years course as one by which, with greater concentration on his studies, he may advance by a year his entrance on professional or special study or into active life; the four years course as affording time for more extended or better digested intellectual work, as well as for the other opportunities and legitimate interests of college life. It would be unfortunate if the three years course should continue to carry with it the implication of over-hasty work, or if the four years course should come to be regarded as a resort for the indolent.”

This statement, in my judgment, sets forth clearly and correctly the policy which should be pursued in dealing with this important matter.

CLEMENT L. SMITH, *Dean.*

NOVEMBER 30, 1901.

## THE COLLEGE.

TO THE PRESIDENT OF THE UNIVERSITY :—

SIR, — I have the honor of making my report on the condition of Harvard College during the academic year 1900–01.

The number of students at the beginning of the year was nineteen hundred and ninety-two :—

Seniors . . . . .	388
Juniors . . . . .	380
Sophomores . . . . .	536
Freshmen . . . . .	<u>537</u>
Total number of Undergraduates . . . . .	1841
Special Students . . . . .	<u>151</u>
	1992

Compared with the figures of the preceding year, these figures show a gain of ninety :—

	Gain.	Loss.
Seniors . . . . .	78	..
Juniors . . . . .	..	12
Sophomores . . . . .	28	..
Freshmen . . . . .	39	..
Special Students . . . . .	..	<u>43</u>
	<u>145</u>	<u>55</u>
	55	
Net gain . . . . .	<u>90</u>	

The noteworthy loss in Special Students, a loss of between twenty and twenty-five per cent., is attributable to increased strictness in the committee charged with their admission.

In the course of the year there were six deaths, of which two were violent and accidental. Two were in the Senior Class, two in the Sophomore, and two in the Freshman. If we count as Seniors members of the Class of 1901 on leave of absence and not registered in the College, there was a seventh death.

Four hundred and fifty-nine students, against four hundred and seven in 1900, received in June the degree of Bachelor of Arts. Of these, ninety were not registered as Seniors. The losses and the gains in the three younger classes between November, 1900, and November, 1901, may be learned from the following tables :—

	November, 1900.	Loss.	Gain.	November, 1901.
Class of 1902 . .	(Juniors) 380	115	80	(Seniors) 345
Class of 1903 . .	(Sophomores) 536	164	40	(Juniors) 412
Class of 1904 . .	(Freshmen) 537	113	108	(Sophomores) 532
		392	228	
Net loss in the three classes between Nov., 1899, and Nov., 1900 . . . 164 (76 more than in 1900)				

	Class of 1902.	Class of 1903.	Class of 1904.	Total for three classes.
<b>LOSSES.</b>				
Left College before the end of the year . .	9	18	16	43
Left College at the end of the year . . . .	100	28	18	146
Were "dropped" and left College . . . . .	1	14	8	23
Entered a lower class . . . . .	3	49	52	104
Entered a higher class . . . . .	2	55	19	76
<b>Total loss . . . . .</b>	<b>115</b>	<b>164</b>	<b>113</b>	<b>392</b>
<b>GAINS.</b>				
From higher classes . . . . .	4	4	51	59
From lower classes . . . . .	56	19	0	75
Newly admitted . . . . .	20	17	57	94
<b>Total gain . . . . .</b>	<b>80</b>	<b>40</b>	<b>108</b>	<b>228</b>
<b>Net loss . . . . .</b>	<b>35</b>	<b>124</b>	<b>5</b>	<b>164</b>
<b>Net gain . . . . .</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

The newly admitted Seniors are only twenty, whereas last year they were forty-six; and the students who left College at the end of their Junior year are one hundred, whereas last year they were eighty-three. Every year more students ask leave of absence after completing in three years the requirements for the degree; and this year, when the new admissions to the three upper classes are only ninety-four (against one hundred and thirty-nine last year), the net loss in these classes is large. If we add to this loss the loss in Special Students, we have a total much too large to be overcome by the new Freshman class: the number of students in Harvard College is twenty or thirty less than it was a year ago.

The next table shows the losses and the gains in the number of Special Students since December, 1900: —

In attendance, December, 1900 . . . . .	151
Left College before the end of the year . . . . .	30
Left College at the end of the year . . . . .	32
Entered a College class . . . . .	29
Total loss . . . . .	91
Reëntered College as Special Students, 1901 . . . . .	60
Newly admitted . . . . .	81
Total . . . . .	141
Net loss . . . . .	10

The Freshman class shows a gain of thirteen members :—

Admitted by examination in 1901 . . . . .	459
Admitted by examination before 1901 . . . . .	37
From a higher class . . . . .	52
“ the Special Students . . . . .	1
“ the Lawrence Scientific School . . . . .	1
Total . . . . .	550

The foregoing table shows that what looks like a gain in Freshmen is a loss in Sophomores. Last year, of thirty-seven Freshmen who failed of promotion in 1899–1900, thirty came back as dropped Freshmen; this year, of sixty who failed in 1900–01, fifty-two have come back. My next table shows that the percentage of Freshmen who were dropped at the end of the year 1900–01 is unprecedentedly large :—

Year.	Total number in the class.	Dropped.	Per cent.
1891 . . . . .	367	28	7.6
1892 . . . . .	381	19	4.9
1893 . . . . .	409	29	7.
1894 . . . . .	425	25	5.8
1895 . . . . .	399	24	6.
1896 . . . . .	462	32	6.9
1897 . . . . .	416	37	8.8
1898 . . . . .	471	29	6.
1899 . . . . .	471	46	9.7
1900 . . . . .	498	37	7.6
1901 . . . . .	537	60	11.1

Inquiry into the origin and the record of the sixty Freshmen dropped in the summer of 1901 yields no clear explanation of their failure; it shows, however, that, if public schools contributed to the



Freshman class their usual proportion of between thirty and forty per cent., they succeeded somewhat better than private schools in sending pupils who weathered the Freshman year. Inquiry shows further that, though what may be called “the greater Boston” contributed but two hundred and nineteen to a class of five hundred and thirty-seven, the same region is responsible for thirty-three dropped Freshmen out of sixty. If these facts “throw a dark light” on Boston as an educational centre, it must be remembered that students from private schools in and about Boston have in college peculiar social distractions.

Of the unfortunate sixty, five were admitted “clear,” and thirty were heavily conditioned. Unquestionably at the Admission Examinations the benefit of the doubt is given to some candidates who as Freshmen prove unworthy. Eighteen of the sixty were admitted in September, making more than sixteen per cent. of those admitted at that time. Since the September candidates are usually persons so belated that they could not finish their work in June, and sometimes persons who were rejected in June, they are not expected to equal the June candidates in their preparation for the Freshman year. Most of them, also, have worked at high pressure during the hot season, and, through a natural mental and physical reaction, find peculiar difficulty in adapting themselves to new systems of instruction.

The following table brings together some interesting facts about the dropped Freshmen of this year : —

From public schools . . . . .	17
From private schools, including endowed academies . . .	43
From Boston and its immediate neighborhood . . . . .	33
From New York City . . . . .	4
From the West . . . . .	14
Admitted “clear” . . . . .	5
Heavily conditioned . . . . .	30
Admitted in June . . . . .	42
Admitted in September . . . . .	18

As a rule, dropped Freshmen are known at the College Office as “Office characters,” — that is, as students who have frequently been summoned and warned by reason of their low marks and the complaints of their instructors. Often, too, their general aspect and bearing explain their failure. This year some Freshmen were dropped who had never caused complaint at the Office and whose marks up to the end of the year, though not high, did not prophesy loss of promotion. This year, moreover, the dropped Freshmen, taken as a

body, appear no less serious and competent than the students of average rank. Partly because of belated reports in some studies, fewer students than usual were put on probation last year; and this leniency may have had its bad effect. My own belief, however, connects the increase of dropped Freshmen with the increase of conferences and short tests in our large lecture courses and with the corresponding decrease of weight given to examinations—for which students may be transiently prepared by skilful coaches. Most dropped Freshmen are dropped for want of C's; and it seems harder for a lazy Freshman to get C than it was some years ago. This theory that more Freshmen are dropped because our tests have become more frequent and searching and because our marking has become harder, does not, it is true, explain why students who had escaped censure till the end of the year failed then; nor is the theory capable of proof: yet, so far as I can judge, the average Freshman does as much work as ever; and no other theory accounts for the increase of failures.

Thirty-one persons who took in June some of their Final Examinations for admission did not take the remainder in September. Besides these, six hundred and eighteen candidates (twenty-nine less than in 1899) took Final Examinations. Of the six hundred and eighteen, four hundred and seventy-one already had Preliminary certificates; sixty-one divided the examinations between June and September; fifty-three took all their examinations in June; twenty-three took all in September; and ten, because of the extraordinary and dangerous heat during the June examinations, were allowed, whether they had Preliminary certificates or not, to combine for an admission record whatever they could pass in June with whatever they could pass in September:—

	Admitted.	Admitted "Clear."	Rejected.
June . . . . .	462	236	34
September . . . . .	103	10	19
Total . . . . .	565	246	53

Of the June candidates, more than half who were admitted were admitted "clear"; of the September candidates, less than one tenth.

The six hundred and eighteen candidates chose their plans of admission as follows. (Every candidate who mixed the New Method with the Old is reckoned as a New Method candidate.)

OLD METHOD.

Plan (a): All the Elementary Studies and at least two Advanced Studies; sixteen hours of examination . . . . .	37
Plan (b): All the Elementary Studies except either German or French, and at least three Advanced Studies; seventeen hours of examination . . . . .	64
Plan (c): All the Elementary Studies except either Greek or Latin, and at least four Advanced Studies, including Advanced Mathematics; eighteen hours of examination . . . . .	0
Plan (d): All the Elementary Studies except either German or French and either Greek or Latin, and at least five Advanced Studies, including Advanced Mathematics; nineteen hours of examination . . . . .	0
	101

NEW METHOD.

With Greek (Elementary) . . . . .	397
Without Greek . . . . .	120
Total . . . . .	517
“ Old Method . . . . .	101
	618

Of the six hundred and eighteen candidates, four hundred and forty-six offered Ancient History rather than Modern; one hundred and fourteen, Modern rather than Ancient; thirty-nine, both Ancient and Modern; four, Ancient and Advanced European; two, Modern and Advanced European; and thirteen, neither. Four hundred and sixty-two candidates offered Experimental Physics rather than Descriptive; and one hundred and five offered no Physics at all. Of the one hundred and five, ninety-three were candidates under the New Method, of whom thirty offered Chemistry, one Physiography, and one Anatomy. In Advanced Studies, Greek, though far behind Latin, has gained the second place:—

1899.	1900.	1901.
1. Latin.	Latin.	Latin.
2. Latin Composition.	French.	Greek.
3. Greek.	Latin Composition.	French.
4. French.	Greek.	Latin Composition.
5. Greek Composition.	Greek Composition.	German.
6. Solid Geometry.	German.	Greek Composition.
7. German.	Solid Geometry.	Log. and Trig.
8. Log. and Trig.	Log. and Trig.	Solid Geometry.
9. Algebra.	Algebra.	Algebra.
10. Analytic Geometry.	History.	History.
11. Physics.	Analytic Geometry.	Physics.
12.	Physics.	Analytic Geometry.
13.	Astronomy.	Meteorology.
14.	Meteorology.	

The next table gives the details on which the foregoing table is based:—

Number of candidates offering	1899.		1900.		1901.	
		Per cent.		Per cent.		Per cent.
Advanced Greek . . . . .	357	61.55	380	60	319	51.62
Advanced Latin . . . . .	531	91.55	550	85	489	79.13
Greek Composition . . . . .	298	51.38	284	44	120	19.58
Latin Composition . . . . .	394	67.92	381	60	173	27.99
Advanced German . . . . .	121	20.86	157	24.26	123	19.9
Advanced French . . . . .	343	60	397	61	259	41.91
Advanced History . . . . .	. . .	. . .	36	5.56	48	7.77
Logarithms and Trigonometry . . . . .	118	20	88	13.60	101	16.34
Solid Geometry . . . . .	143	24.65	93	14.37	82	13.27
Analytic Geometry . . . . .	17	2.93	10	1.54	6	.97
Advanced Algebra . . . . .	46	7.93	51	8 —	49	7.93
Advanced Physics . . . . .	8	1.38	8	1.23	7	1.13
Astronomy . . . . .	. . .	. . .	7	1.08	0	.0
Meteorology . . . . .	. . .	. . .	4	.61	2	.32

The next two tables show, for each study, the percentage of failure (*A*) in the complete records of the candidates, including the records of their successful Preliminary Examinations, and (*B*) in their records at Final Examinations only:—

( <i>A</i> )	1896.	1897.	1898.	1899.	1900.	1901.
<b>ELEMENTARY STUDIES.</b>						
English . . . . .	8	10.9	8.7	9.6	10.2	9.42
Greek . . . . .	9.7	5.4	7.86	10.6	4	3.18
Latin . . . . .	6.8	4.5	6.75	4.65	6	3.91
German . . . . .	23.3	24.9	17.07	22.97	17.85	16.67
French . . . . .	9.8	6.2	3.54	6.65	7.6	7.05
History (Ancient) . . . . .	4.8	9.09	9.41	5	8.2	10.46
History (Modern) . . . . .	9.6	17.1	7	10	7.44	16.54
Algebra . . . . .	17.4	16.04	14.56	16.55	14	14.97
Geometry . . . . .	. . .	. . .	. . .	. . .	24	7.06
Plane Geometry . . . . .	23.1	15.02	26.29	25.7	26.60	16.38
Physics (Descriptive) . . . . .	43.1	28.7	27.05	47.37	25.67	22.45
Physics (Experimental) . . . . .	14.1	16.9	12.65	18.53	18.44	17.07
Chemistry . . . . .	14.8	16.1	15.29	18.48	12	10.82
Physiography . . . . .	. . .	. . .	. . .	. . .	11	33.33
Anatomy . . . . .	. . .	. . .	. . .	. . .	20	50

	1896.	1897.	1898.	1899.	1900.	1901.
<b>ADVANCED STUDIES.</b>						
Greek . . . . .	16.1	7.5	12.5	14.28	13.16	12.96
Latin . . . . .	24.5	19.1	15.73	20	23.45	21.74
Greek Composition . . . . .	21.6	22.8	16.06	20	10.56	16.45
Latin Composition . . . . .	19.2	14.1	15.52	25.63	20.21	22.84
German . . . . .	28.2	32.2	14.18	26.61	30	31.21
French . . . . .	23.8	15.5	17.78	18.37	26.47	27.57
History . . . . .	. . .	. . .	. . .	. . .	41.66	45.1
Logarithms and Trigonometry . . . . .	42.7	27.1	41.60	26.17	23.86	23.85
Solid Geometry . . . . .	40.2	33.5	26.76	20.98	22.58	27.78
Analytic Geometry . . . . .	50	27.7	50	23.53	30	66.67
Algebra . . . . .	36.6	54.9	43.14	35	41.17	48
Physics . . . . .	57.1	55.5	16.67	37.5	37.5	71.43
Astronomy . . . . .	. . .	. . .	. . .	. . .	100	0
Meteorology . . . . .	. . .	. . .	. . .	. . .	50	100

<b>(B) ELEMENTARY STUDIES.</b>			<b>ADVANCED STUDIES.</b>		
	1900.	1901.		1900.	1901.
English . . . . .	13.83	13.43	Greek . . . . .	14 —	13.21
Greek . . . . .	13.5	10.67	Latin . . . . .	23.75	22.45
Latin . . . . .	18.75	11.76	Greek Composition . . . . .	17.65	20.66
German . . . . .	27.3	25.98	Latin Composition . . . . .	29.72	30.64
French . . . . .	18 —	17.79	German . . . . .	37	35.77
History (Ancient) . . . . .	20	20.41	French . . . . .	33.76	39.53
History (Modern) . . . . .	10.76	25.61	History . . . . .	41.66	47.92
Algebra . . . . .	33.58	32.62	Log. and Trig. . . . .	23.86	29.7
Geometry . . . . .	24.6	10	Solid Geometry . . . . .	26.25	31.33
Plane Geometry . . . . .	37.30	21.2	Analytic Geometry . . . . .	50	66.67
Physics (Descriptive) . . . . .	29.23	26.19	Algebra . . . . .	42.85	48.98
Physics (Experimental) 28 + . . . . .	19.65	28 +	Physics . . . . .	50	71.43
Chemistry . . . . .	12.38	11.67	Astronomy . . . . .	100	0
Physiography . . . . .	11 +	33.33	Meteorology . . . . .	50	100
Anatomy, etc. . . . .	20	50			

The decreased percentage of failure in Elementary Latin and Plane Geometry and the increased percentage in Modern History are noteworthy. In Advanced History nearly half the candidates failed. Last year seven candidates offered Astronomy; and all failed; this year no one offered Astronomy. This year two offered Meteorology; and both failed.

Six hundred and thirty-one candidates (thirteen more than in 1900) took Preliminary Examinations; of whom five hundred and thirty-one (thirty-seven more than in 1900) received certificates:—

## NEW METHOD.

Eight points . . . . .	59
Nine " . . . . .	8
Ten " . . . . .	71
Eleven " . . . . .	1
Twelve " . . . . .	98
Thirteen points . . . . .	6
Fourteen " . . . . .	129
Fifteen " . . . . .	5
Sixteen " . . . . .	70
Seventeen " . . . . .	8
Eighteen " . . . . .	48
Nineteen " . . . . .	2
Twenty " . . . . .	15
Twenty-one points . . . . .	3
Twenty-two " . . . . .	12
Twenty-three " . . . . .	1
Received certificates . . . . .	<u>531</u>
Failed . . . . .	100
Total number of candidates . . . . .	631

The next table gives the percentages of failure in Preliminary Studies. The decreased percentages in Geometry and Plane Geometry are especially cheering:—

ELEMENTARY.			ADVANCED.		
	1900.	1901.		1900.	1901.
English . . . . .	26	34.78	Greek . . . . .	50	38.89
Greek . . . . .	10.93	5.81	Latin . . . . .	54.76	47.62
Latin . . . . .	15.88	23.95	Greek Composition . . . . .	24	15.36
German . . . . .	34.71	24.34	Latin Composition . . . . .	33.68	38.89
French . . . . .	14.67	16.07	German . . . . .	29.17	28.95
History (Ancient) . . . . .	21.67	18.65	French . . . . .	22.45	36.99
History (Modern) . . . . .	15.62	27.54	History . . . . .	60	71.43
Algebra . . . . .	27.41	29.57	Log. and Trig. . . . .	36.36	33.33
Geometry . . . . .	41.46	19.05	Solid Geometry . . . . .	21	14.29
Plane Geometry . . . . .	53.48	35.55	Analytic Geom. . . . .	Not offered	
Physics (Descriptive) . . . . .	27.27	62.5	Algebra . . . . .	60	52.38
Physics (Experimental) . . . . .	20	26.61	Physics . . . . .		100
Physiography . . . . .	Not offered		Chemistry . . . . .	20	13.51
Anatomy, etc. . . . .	Not off'd	0*	Astronomy . . . . .	Not offered	
			Meteorology . . . . .	Not offered	

\* Two candidates only.

In printing statistics of "Credits" won at the examinations for admission to College, I give (A) the "Credits" won this year at Final Examinations; (B) those won this year and some earlier year by the Final candidates of this year; and (C) those won this year at Preliminary Examinations:—

(A) ELEMENTARY STUDIES.			ADVANCED STUDIES.		
	June.	Sept.		June.	Sept.
English . . . . .	29	0	Greek . . . . .	69	1
Greek . . . . .	28	3	Latin . . . . .	31	0
Latin . . . . .	21	1	Greek Composition . .	6	0
German . . . . .	36	0	Latin Composition . .	10	1
French . . . . .	13	0	German . . . . .	18	1
History (Ancient) . . .	19	6	French . . . . .	5	0
History (Modern) . . .	6	1	History . . . . .	1	0
Algebra . . . . .	20	3	Log. and Trig. . . . .	7	0
Geometry . . . . .	11	1	Solid Geometry . . . .	12	0
Plane Geometry . . . .	74	7	Analytic Geometry . .	1	0
Physics (Descriptive) .	5	1	Algebra . . . . .	10	0
Physics (Experimental)	77	5	Physics . . . . .	0	0
Chemistry . . . . .	32	2	Astronomy . . . . .	0	0
Physiography . . . . .	0	0	Meteorology . . . . .	0	0
Anatomy, etc. . . . .	0	0			
	371	80		170	3

(B) ELEMENTARY.		ADVANCED.	
English . . . . .	36	Greek . . . . .	70
Greek . . . . .	112	Latin . . . . .	34
Latin . . . . .	108	Greek Composition . . . .	7
German . . . . .	64	Latin Composition . . . .	12
French . . . . .	53	German . . . . .	26
History (Ancient) . . . .	60	French . . . . .	14
History (Modern) . . . . .	10	History . . . . .	1
Algebra . . . . .	74	Log. and Trig. . . . .	8
Geometry . . . . .	13	Solid Geometry . . . . .	14
Plane Geometry . . . . .	87	Analytic Geometry . . . .	1
Physics (Descriptive) . . . .	8	Algebra . . . . .	10
Physics (Experimental) . . . .	100	Physics . . . . .	0
Chemistry . . . . .	38	Astronomy . . . . .	0
Physiography . . . . .	0	Meteorology . . . . .	0
Anatomy, etc. . . . .	0		
	768		197

(C) ELEMENTARY.		ADVANCED.	
English . . . . .	2	Greek . . . . .	2
Greek . . . . .	148	Latin . . . . .	3
Latin . . . . .	48	Greek Composition . . . . .	0
German . . . . .	57	Latin Composition . . . . .	1
French . . . . .	48	German . . . . .	13
History (Ancient) . . . . .	30	French . . . . .	9
History (Modern) . . . . .	3	History . . . . .	0
Algebra . . . . .	70	Log. and Trig. . . . .	0
Geometry . . . . .	4	Solid Geometry . . . . .	0
Plane Geometry . . . . .	45	Analytic Geometry . . . . .	0
Physics (Descriptive) . . . . .	1	Algebra . . . . .	5
Physics (Experimental) . . . . .	20	Physics . . . . .	0
Chemistry . . . . .	1	Astronomy . . . . .	0
Physiography . . . . .	0	Meteorology . . . . .	0
Anatomy, etc. . . . .	0		
	472		33

In January, 1901, the Faculty voted: "That it is inexpedient for this Faculty to accept the certificate of the College Entrance Examination Board for the Middle States and Maryland, and that the Dean [of the Faculty] be instructed to communicate this decision to the Secretary of the Board."

The members of the Administrative Board of Harvard College for 1900-01 were: The Dean of the College, Professors de Sumichrast, Willson, C. P. Parker, Gross, Grandgent, Gardiner, Coolidge, Johnson, Ward, and Gulick; Doctors Robinson, Palache, and Russell; and Messrs. Nichols, Cram, Wright, and Cobb.

In the course of the year the Board suspended one Junior, one Sophomore, and one Freshman for dishonesty in written work, and one Junior for disorderly and disingenuous conduct. The Faculty expelled two Special Students,—one for forgery, the other for imposture. The Board closed the probation of one Junior and one Freshman. Two Seniors, one Sophomore, five Freshmen, and ten Special Students withdrew under more or less pressure. Outside of these cases of discipline, the meetings of the Administrative Board were uneventful.

Through the generous courtesy of Hon. George Frisbie Hoar, Class of 1846, the first public meeting held by the Committee on the Publication of Academic Distinctions in Harvard College was



assured of success. The award of prizes was announced; "Deturs" were presented; and the highest undergraduate scholars were honored by an address from the Senator. The scholars of the First Group were afterward entertained in Boston at the house of Mr. Henry Lee Higginson. Fifty-one students, against forty-eight in 1899-1900, won a position in the First Group of Scholars:—

Of the fifty-one, twenty belonged to the Class of 1901, fourteen to the Class of 1902, and seventeen to the Class of 1903. Massachusetts contributed thirty-four; New York, eight; Pennsylvania, two; Rhode Island, Connecticut, Ohio, Indiana, Illinois, Iowa, and Missouri, one each. The preparatory sources represented are thirty-nine: the Boston Latin School appears seven times in the list; Phillips Academy (Andover) and the Lynn Classical High School appear three times each; the Phillips Exeter Academy, the Roxbury Latin School, and the Boston English High School, twice each.

The Jacob Wendell Scholarship, the gift of the late Jacob Wendell of New York, became available in the Sophomore Year of the present Senior Class. It differs from most other Scholarships in being a prize for which any man, rich or poor, may honorably compete; and it is awarded every year to that member of the last Freshman Class who, in the judgment of the Faculty, has the strongest record in his studies. The present marking system makes an accurate rank list impossible; but the Committee on Scholarships can usually find a scholar who may fairly be called first. The Richard Augustine Gambrill Scholarship, with an income of \$425, is commonly awarded to the Senior who for three years together has the strongest record in his class among legitimate applicants for scholarships in money. Both the Jacob Wendell Scholarship and the Richard Augustine Gambrill involve a judgment of the Committee in a somewhat delicate question of rank. A similarly delicate question must be answered now and then at the lower end of the list of scholarships awarded in open competition: among students whose records appear to be equal, one or two must be chosen for aid, the others left unaided.

In my report for the academic year 1898-99, I called attention to the need of more scholarships in Harvard College. This year a Senior or a Junior who holds a scholarship won in open competition must have attained Grade *A* in half his work for the year 1900-01, and not less than Grade *B* in the other half; a Sophomore must have attained the equivalent of two *A*'s and three *B*'s, — and even with this record a number of needy Sophomores have not received scholarships. Moreover, the record which wins a scholarship for a

CLASS.	NAME.	SCHOLARSHIP.	HOME.	SCHOOL.
'08	John Mead Adams	Price Greenleaf	Cambridge	Reading High School.
'02	Ernest Bernbaum	Bowditch	New York, N. Y.	W. C. Readie, Private Tutor.
'08	Halsey Moore Borthwick	Price Greenleaf	Cambridgeport	Manchester, N. H., High School.
'02	Roscoe Conkling Bruce	Bowditch	} Indianapolis, Ind.	The Phillips Exeter Academy.
		Wendell Phillips Memorial		
'01	Henry Porter Chandler	Bowditch	Indian Orchard	Leland Stanford Jr. University.
'03	Laurence Remick Clapp	"	South Boston	Boston Latin School.
'01	David Cohn	"	Buffalo, N. Y.	Buffalo, N. Y., Central High School.
'02	Alfred Mitchell Dame	John Harvard	Cambridge	Lynn Classical High School.
'01	Harold Stearns Davis	"	Pittsfield	Pittsfield High School.
'01	Paul Dudley Dean	"	Boston	Boston Latin School.
'01	Charles Frederick Dutch	Class of 1856	Winchester	Winchester High School.
'02	George Allan England	Mathews	Hampton, Conn.	Boston English High School.
'03	Roger Ernst	John Harvard	Jamaica Plain	J. P. Hopkinson's.
'03	James Alfred Field	Jacob Wendell	Boston	Milton Academy.
'02	George Shannon Forbes	Bowditch	Roxbury	Roxbury Latin School.
'02	Sanford Dewey France	Bigelow	Cobleskill, N. Y.	Oneonta, N. Y., State Normal School.
'01	Mitchell Freiman	Class of 1856	Boston	Boston Latin School.
'01	Sanford Henry Eisner Freund	John Harvard	New York, N. Y.	Phillips Academy, Andover.
'03	Henry Rozalvin Gardner	Bowditch	Somerville Highlands	Boston Latin School.
'03	Charles Whitney Gilkey	"	Watertown	Watertown High School.
'02	Arthur Eldredge Goddard	Farrar	Brockton	Brockton High School.
'03	Ralph Harvard Goldthwaite	Bowditch	Brighton	Boston Latin School.
'01	Ernest Amlin Gray	Price Greenleaf	Woonsocket, R. I.	Woonsocket, R. I., High School.
'02	Robert Montraville Green	John Harvard	Boston	Boston Latin School.
'03	Isador Grossman	Price Greenleaf	Cleveland, O.	Cleveland, O., Central High School.
'03	Matthew Hale	John Harvard	Albany, N. Y.	Albany Academy, Albany, N. Y.

HIGHEST SCHOLARS.

CLASS.	NAME.	SCHOLARSHIP.	HOME.	SCHOOL.
'01	Walter Stern Heilborn . . . . .	John Harvard . . . . .	Boston . . . . .	Boston English High School.
'03	George Clarkson Hirst . . . . .	Price Greenleaf . . . . .	Philadelphia, Pa. . . . .	Temple College, Philadelphia, Pa.
'01	William Ernest Hocking . . . . .	Bowditch . . . . .	Knoxville, Iowa . . . . .	Iowa State College.
'02	John Haynes Holmes . . . . .	" . . . . .	Malden . . . . .	Malden High School.
'01	George Miller Hosmer . . . . .	" . . . . .	Somerville . . . . .	Somerville Latin High School.
'02	Roger Irving Lee . . . . .	" . . . . .	Peabody . . . . .	Peabody High School.
'01	William George Lee . . . . .	John Harvard . . . . .	Waukegan, Ill. . . . .	Lake Forest University.
'08	Dean Putnam Lockwood . . . . .	" . . . . .	St. Louis, Mo. . . . .	Smith Academy, St. Louis, Mo.
'02	Joseph Aloysius Love . . . . .	Price Greenleaf . . . . .	Webster . . . . .	The Phillips Exeter Academy.
'01	Frederick Warren Lovejoy, Jr. . . . .	Bowditch . . . . .	Brooklyn, N. Y. . . . .	Brooklyn, N. Y., Boys' High School.
'03	Robert William Magrane . . . . .	Class of 1802 . . . . .	" . . . . .	Pratt Institute.
'03	John Joseph Mahoney . . . . .	Bowditch . . . . .	Lawrence . . . . .	Phillips Academy, Andover.
'01	Gilbert Holland Montague . . . . .	Price Greenleaf . . . . .	Springfield . . . . .	Springfield High School.
'01	Harvey Field Newhall . . . . .	John Harvard . . . . .	Lynn . . . . .	Lynn Classical High School.
'03	Arthur Stanley Pease . . . . .	Price Greenleaf . . . . .	Andover . . . . .	Phillips Academy, Andover.
'01	Torsten Petersson . . . . .	Richard Augustine Gambrell, Palfrey Exhibition . . . . .	} Lynn . . . . .	Lynn Classical High School.
'03	Augustus Loring Richards . . . . .	Price Greenleaf . . . . .	South Sherborn . . . . .	Boston Latin School.
'01	Charles Franklin Shaw . . . . .	" . . . . .	Philadelphia, Pa. . . . .	Cheltenham Military Academy.
'03	Elijah Swift . . . . .	John Harvard . . . . .	Wollaston . . . . .	Quincy High School.
'01	Stanley Powers Rowland Thomas . . . . .	Ruluff Sterling Choate . . . . .	Peabody . . . . .	Edward Little High School, Auburn, Me.
'02	Herbert Calhoun Thorndike . . . . .	Bowditch . . . . .	East Bridgewater . . . . .	East Bridgewater High School.
'01	Roland Greene Usher . . . . .	John Harvard . . . . .	Grafton . . . . .	Grafton High School.
'01	Maurice Joseph Wall . . . . .	Burr . . . . .	Worcester . . . . .	Worcester Classical High School.
'02	Raynor Greenleaf Wellington . . . . .	John Harvard . . . . .	Roxbury . . . . .	Roxbury Latin School.
'02	Alsin Campbell White . . . . .	" . . . . .	New York, N. Y. . . . .	Blake's School, New York, N. Y.

Sophomore is made in the Freshman year, when nearly all the competitors are getting their first experience in university methods, when many are newly come from inefficient schools or from schools that seldom send pupils to Harvard College, and when nearly all are required to take Rhetoric and English Composition, in which the marks are proverbially low.

In the present Sophomore Class alone, twenty-six applicants with grades which a few years ago would have insured scholarships have received none; and in the same class thirty-two applicants with grades which would have insured either scholarships or Price Greenleaf Aid have been recommended for neither. In all three classes, between seventy and seventy-five men with such records as a few years ago made college aid a certainty have failed. Among good students the need of money is so great that about \$1000 of the Price Greenleaf money ordinarily used in extending the scholarship list has been set apart for emergencies; but in meeting the expenses of seventy-five men at college \$1000 does not go far. It is only fair to say that the higher average of the marks for Seniors and Juniors in the last year or two is caused in part by the abolition of the half-course in Junior Prescribed English, and by the abolition, for most good students, of the half-course in Sophomore Prescribed English: but there is no such cause for the improved marks of high scholars in the youngest of the competing classes; and after every allowance for prescribed English is made, it is yet certain that the number of our students with very high records has increased, and that it is a good deal harder to win a scholarship than it used to be. The College is believed to be so wealthy, and the actual amount of money for scholarships is so large, that some parents (who think their own boys as good as anybody's) are offended if their sons get no aid; others account for what they call the "loss" of a scholarship by some grave misdemeanor of their sons' which the college authorities have concealed. All these persons overlook the plain arithmetical truth that, if three hundred men apply for one hundred scholarships, two hundred must fail. If all the applicants are deserving, the successful ones are those of highest rank. Rank, an unsatisfactory criterion at best, might in a college of fifty students be disregarded; but in a college of two thousand, where no committee can be personally acquainted with the relative merit of three hundred applicants of whom no two have taken the same elective courses, it must tell for much. High rank commonly indicates superior mental power applied to the fulfilment of college duties, — attention to business, such as augurs well for the student's future; and the occasional award of a

scholarship to a "mark-fiend" who never comes to anything in after life does not destroy this general truth.

In dwelling on the need of scholarships, I do not forget that men may be pauperized. It is commonplace to say that every student, rich or poor, is more or less of a pauper in receiving a college education; and it is almost equally commonplace to say that in America the strength of any one generation is found in large part among men whose parents cannot pay their college expenses, and who through scholarships are enabled to rise to their true intellectual level. Even a student of mediocre power may justify college aid; for, as Senator Hoar remarked in his address to our high scholars, much of the good work of the world is the work of dull men who have done their best. For the degree of Doctor of Philosophy none but students for whom the higher learning is the natural and inevitable aim should be encouraged to study; men who profit by more than a single year of subsidized graduate instruction are a strong and chosen few: boys worth helping through college are unnumbered. Every year eager and deserving youths are turned away from the best college opportunities for want of money; and others who dare to come struggle with constant anxiety and are tempted by the obvious but disastrous economy of underfeeding. The risk of an occasional beggar is nothing to such a risk as this. The College does its best to find for students profitable work, and to prevent dangerous hardship; no one unfamiliar with the inner working of its government begins to know how much time and effort are spent in the problems of needy students: yet, though a youth of "high scholarship" and "high character" is seldom allowed to go away for want of money, the definition of "high scholarship" becomes more and more exacting. Harvard College might well use twice as many scholarships as it has now.

To persons interested in the social life of students the most important gift of the academic year, and one of the most important ever received by the University, is the building for the new Harvard Union. Though not ready for use until this autumn, it was open for the inspection of graduates on Commencement Day; and on that day many graduates joined the Union as life members. For years the want of such a building has been known to all who believe that occasions in which many hundred members of the University come together for a common purpose are essential to college life and college loyalty. Comparisons unfavorable to Harvard are often drawn between Harvard and other colleges, whose members,

whether in athletics, or in literary exercises, or in religious observances, move together as one man.

Reasons for an apparent want of unity in Harvard University are many. A college close to a large city is exposed to the influence and to the diversified interests of that city; and though many of these interests are of the best, and though one element of strength in Harvard is its proximity to Boston, there is no doubt that students isolated in a country town, or living in a city of moderate size far away from anything that may be called a metropolis, find their interests centred nearer the university and nearer one another.

Another cause of diversity of interests is the development of the elective system. Thirty years ago, all Harvard Freshmen had the same studies and usually the same teachers; and in certain subjects half the class would recite together: now a student may go through four years without meeting all his classmates. Though this variety of interests gives Harvard University a strength of its own, it tends to prevent that other kind of strength which springs from united action, and that kind of college spirit which common interests foster.

The mere size of the University has made it impossible for all the students to belong to any one society or club; and the older societies and clubs, though their influence has steadily improved, are sometimes believed to promote the formation of cliques. At best, they cannot be thoroughly democratic. The Harvard Union is a club to which every member of the University is welcome on the payment of a small admission fee. It has suitable rooms for committees and societies, a good restaurant such as has long been needed in Cambridge, a reading room, a small but constantly growing library, offices for athletics and for the college press, and a large main hall suitable for mass meetings, impromptu concerts, and gatherings of all sorts. Even now, after an existence of a few weeks, it has aroused such united enthusiasm as the University has never known; and it cannot fail now and always to promote the best kind of democracy.

L. B. R. BRIGGS, *Dean.*

## THE LAWRENCE SCIENTIFIC SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR, — As Dean of the Scientific School I submit the following report for the academic year 1900–01.

The following tables of statistics show that the decrease of attendance which, on the basis of the experience of the other schools of this University, was expected to follow the somewhat rapid annual addition to the entrance requirements, has not yet come about. These additions have already increased the number of required points from the total of fifteen in 1898 to a total of twenty-one at the last entrance examinations. Yet in the present year the gain in registration has exceeded that of any year since 1893. Inspection of the tables, however, shows that the increase this year was not due to admissions by examination, but (1) to a greater resort to the School by persons who had been members of other scientific schools and colleges, and (2) to the fact that a larger proportion than heretofore of those registered in the previous year returned to the School. Since 1899, when the plan of adding two points each year to the number required for entrance was put in operation, the total registration of the School has increased from 410 in 1898–99 to 549 in 1901–02. Thus, while the last stages of the process in 1902 and 1903 may lead to some reduction in the number of students enrolled in the School, there is reason to believe that the decrease will not be serious.

### SPECIAL STUDENTS.

Number of years in attendance.	1900-01 to Nov. 26.	1901-02 to Nov. 21.
One . . . . .	53	59
Two . . . . .	14	16
Three . . . . .	10	6
Four . . . . .	5	4
Five . . . . .	0	2
Totals . . . . .	82	87

### REGISTRATION BY CLASSES IN L. S. S. CATALOGUE.

Class.	1900-01 to Nov. 26.	1901-02 to Nov. 21.
Fourth-Year . . . . .	69	76
Third-Year . . . . .	65	88
Second-Year . . . . .	136	141
First-Year . . . . .	155	157
Specials . . . . .	82	87
Totals . . . . .	507	549

## REGISTRATION FOR ADMISSION EXAMINATIONS.

Year.	Preliminary.	Final.	Total.
1900 . . . . .	104	275	379
1901 . . . . .	68	216	284

## DISTRIBUTION OF STUDENTS IN FOUR-YEAR PROGRAMMES.

Programme.	1900-01 to Nov. 26.	1901-02 to Nov. 21.
Civil Engineering . . . . .	62	56
Mechanical Engineering . . . . .	64	82
Electrical Engineering . . . . .	42	49
Mining and Metallurgy . . . . .	42	67
Architecture . . . . .	26	29
Landscape Architecture . . . . .	11	9
Chemistry . . . . .	21	32
Geology . . . . .	6	5
Biology . . . . .	10	12
Anatomy, etc. . . . .	31	30
Teachers of Science . . . . .	22	21
General Science . . . . .	170	157
Totals . . . . .	507	549

It having become evident that the steady increase in the entrance requirements would make it difficult for the greater number of public high schools to prepare pupils for admission, the masters of schools which have sent us candidates were invited to a conference held on July 12th, 1901. At a like meeting held in February, 1897, there was a general agreement of the masters that it would be well to have the weight of those examinations for entrance to the Lawrence School, as measured in points, brought to the grade required by Harvard College. While it was then recognized that this change would be likely to debar many youths from the Scientific School, it was felt that it would in other ways be distinctly advantageous to the public high schools and the academies.

The last conference with the masters of public schools showed that, after four years of experience with the gradually increasing requirements of the Lawrence Scientific School, they were still in favor of the gradual increase. Some doubt, however, was expressed concerning the ability of the ordinary high school to prepare candidates to pass in a total of twenty-six points as will be required in, and after, 1903. There can be no question that many rural English High Schools, because they lack Chemical and Physical laboratories, as well as teachers in those or other branches of science, will find it impossible to fit their pupils to pass in enough studies for entrance to either Harvard College or the Lawrence Scientific School.



To meet this difficulty, the Lawrence Scientific School has for a number of years been engaged in an interesting experiment with that group of students known as "Specials." For some years after the School began rapidly to increase in numbers, the greater part of the attendance consisted of such persons, entering without previous examination. Although the regulations concerning the admission of these Special Students were intended to ensure that they had received a training sufficient to prepare them to go on with the studies they wished to pursue, the result was that many persons were admitted who lacked a sound preliminary education. For some years the Administrative Board of the School has determined to restrict the admission of Special Students to those who fall into one or the other of two categories: First, the very limited number, mostly persons of considerable maturity, who wish to engage in some particular study, such as Analytic Chemistry or Architectural Drawing, and have no intention of seeking a degree; second, those who, because they come from schools where they could not obtain an adequate preparation, are not fitted to present themselves for examination in the required number of subjects for admission to regular standing.

Candidates for admission as Special Students who clearly belong in the first of the above-named groups are admitted on evidence of good character and of training sufficient to enable them to take the studies which they wish to pursue. Each of those in the second group is required to pass satisfactory examinations in entrance subjects aggregating twelve points, including the required entrance mathematics. He is, moreover, required to have from the master of the school whence he came, or which he has last attended, written consent to his request for admission as a Special Student. When a student is thus admitted as a Special Student he is expected to make good his entrance conditions within two years and to obtain regular standing. If he is a person of capacity he can do this in part by obtaining a satisfactory grade in advanced studies, which directly continue those of an elementary sort included in the entrance examinations, and in part by devoting the greater part of the two summers following his admission to elementary work. For such preparation the summer courses of instruction offered by the Faculty of Arts and Sciences may afford much help.

That this method of accepting the certificates of schoolmasters as to the ability and character of their pupils who seek admission as Special Students is valuable, is clearly shown by the fact that, notwithstanding the burdens they have to carry in their first year in the

School, a considerable proportion have found it possible to obtain their degrees in not more than five years. The system has the evident advantage that it enables the high schools which can teach but few subjects, but teach those efficiently, to send their abler pupils to this School.

At the conference of last July it was generally urged by the schoolmasters that Civics and Government be added to the optional studies in which examinations may now be taken for admission to the Lawrence Scientific School, on the ground that the subject is important, that it is, on the whole, well taught in the public high schools, and that it is in its nature suitable for such use. The Administrative Board has recommended such action to the Faculty of Arts and Sciences. At the same meeting it was proposed that, as systematic instruction in Music was now given in certain schools, an entrance examination in Harmony be established. On this proposition no action has as yet been taken.

The tables show the changes in the attendance in the several four-year programmes of instruction. It will be noted that, while the number of those registered in the programme of General Science has still further and considerably decreased, the attendance on the others has become greater. The gain is most notable in Mining and Metallurgy, the gain there being due to the better equipment afforded by the Simpkins laboratories, which now afford the long-needed means of teaching in a practical way the most important principles of the art of treating ores. The decrease of attendance in the programme of General Science is not unexpected, nor is it to the disadvantage of the School. It is the natural result of bringing the entrance requirements towards the point where the time needed in preparing for them is about as great as is demanded for those set by the College. The disappearance of this group will relieve the School of those students who are seeking a general training which they can equally well obtain from the College, and leave to the School the task of preparing men for professional employment.

Although the new buildings provided for the Departments of Engineering, Geology, Architecture, and Mining were not entirely completed at the beginning of the present academic year, there is reason to hope that they will all be ready for use before the end of the first term. There remains the crying need of better quarters for the Department of Chemistry. If these are not soon provided, the lack thereof will be a very serious hindrance to the development of the School. Some instruction in Chemistry is required in all its programmes. As yet, few students enter with sufficient knowledge

of that subject to avoid further study of it. As the Department of Chemistry gives preference to those who at the beginning of the year are enrolled in the regular classes of the School, none of this group of students have as yet been deprived of their needed opportunities. But some students register late, and a considerable number of those enrolled as Specials are seeking regular standing. Some of those enrolled in the School have been unable to obtain desks in the laboratory.

The discipline of the School remains good. During the year four students were put on probation and one was suspended, for handing in work not their own. Sixty-five were put on probation for inadequate performance of duty. In twelve instances the probation was closed because of persistent neglect or failure to accomplish the required work. No instances of drunkenness, gambling, or lewdness came to the knowledge of the administrative officers of the School.

The health of the School has been good, no death having occurred during the academic year. This satisfactory condition is in some part due to the promptness with which cases of illness are reported to the Office and to the efficiency of the medical visitation. The evil of "signing-off" for slight indispositions, such as men in active life cannot afford to consider, has been less noticeable than in previous years. On the average somewhat over 97% of the men are by their own account of themselves fit for duty.

In considering the position of the School with reference to the College and to the Graduate School, it is well to keep in mind the extent to which the instruction in these divisions of the work done in the Faculty of Arts and Sciences has been merged. At present more than half the students enrolled in the several departments which were established in the once distinct Lawrence School are from the other two divisions. In the existing state of the organization, a large number of students enrolled in Harvard College are following substantially the same courses of study as would be required of them were they in some of the four-year programmes of the Scientific School. Some of these men transfer to the School at the end of their third year, with the intention of taking their degree in Arts at the end of the fourth year, and that in Science at the end of the fifth year of their residence at the University. So far the effect of this system has been very satisfactory. It enables industrious students of fair ability to obtain a somewhat extended general education and also sufficient technical training to fit them for the novitiate in several branches of professional science within five years of the time when they enter college. For such men the serious diffi-

culty of beginning professional life at a too advanced age, which is encountered by those college graduates who resort to the schools which fit for Law or Medicine, is effectively solved. Entering college at eighteen, a young man who makes a proper choice of his studies is thus enabled to graduate in Engineering at twenty-three, relatively as well equipped for professional duty as he would be in the other professions for which he would not be made ready until he was twenty-six years old.

N. S. SHALER, *Dean.*

## THE GRADUATE SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—As Dean of the Graduate School I have the honor to present my report upon the School for the academic year 1900–01.

The members of the Administrative Board for the year were Professors Toy, Jackson, Davis, Byerly, M. Warren, Strobel, von Jagemann, Hart, Kittredge, Münsterberg, and the Dean of the School. The only member who had not been in service during the previous year was Professor Strobel. He replaced Professor B. O. Peirce, who was absent from the University on leave.

The Board met nine times in the course of the year, oftener in the opening and closing months than in the middle of the year. The ordinary routine business of the Board was the admission of students to the School and to candidacy for the higher degrees, action on programmes of courses offered by students for the degree of Master of Arts, and consideration of various petitions and inquiries.

The topics to be discussed in this report are, first, the membership of the School; second, the degrees for which recommendations were made at the close of the year, and the holders of these degrees; third, fellowships and scholarships; and, fourth, miscellaneous topics. Much information about the membership and character of the School may be given in tabular form. As the Tables for the most part explain themselves, my remarks upon them will be brief.

- I. Number and classification of students (resident and non-resident; students doing full or partial work; fields of study; length of connection with the School; holders of Bachelor's and of the higher degrees): 1898–99, 1899–1900, 1900–01.
- II. Resident Students doing full work, and Non-Resident Students: 1886–1901.
- III. Percentage of students in their first and following years: 1896–1901.
- IV. Colleges and Universities represented, with Degrees held: 1900–01.
- V. Colleges and Universities represented by four or more graduates in the School: 1896–97, 1897–98, 1898–99, 1899–1900, 1900–01.
- VI. Migration of Graduate Students.
- VII. Birthplaces of Graduate Students: 1894–1901.
- VIII. Residences of Graduate Students: 1899–1901.
- IX. Recommendations for Degrees in 1899, 1900, 1901.
- X. Divisions and Departments in which recommendations for the Higher Degrees were made in 1901.
- XI. Age of Graduate Students recommended for the Degrees of Master of Arts and Doctor of Philosophy: 1901.
- XII. Age of Doctors of Philosophy created in 1897–1901.
- XIII. Fellowships and Scholarships: numbers and classification of applicants and appointees in 1899–1900, 1900–01, 1901–02.

## STUDENTS.

The number of students registered in the School for 1900-01 was three hundred and fifty-three, a larger number than in any previous year. This number does not include a few men who were in the School for a period of less than six weeks at the opening of the year. To these three hundred and fifty-three persons who were actually members of the School might be added twenty-three members of the Class of 1901 in Harvard College who, in their Senior year, were pursuing studies that had been approved for the degree of Master of Arts.

TABLE I. — NUMBER AND CLASSIFICATION OF STUDENTS.

	1898-99.	1899-1900.	1900-01.
I. Resident Students doing full work in the School for the whole academic year . . .	218	227	226
Resident Students not doing full work or not working for the whole year as resident students . . . . .	108	99	118
	— 321	— 326	— 339
Non-Resident Students holding fellowships .	12	13	14
Non-Resident Students not holding fellowships	3	2	0
	— 15	— 15	— 14
II. Students whose studies lay chiefly in *			
1. Semitic Languages and History . . . . .	3	0	1
2. Ancient Languages (Classics and Sanskrit)	47	55	47
3. Modern Languages (including Comparative Literature) . . . . .	80	83	75
4. History and Political Science . . . . .	54	54	53
5. Philosophy (including Education) . . . . .	52	48	65
6. Fine Arts (including Architecture) . . . . .	4	4	4
7. Music . . . . .	1	1	1
8. Mathematics . . . . .	19	12	20
9. Engineering . . . . .	0	4	6
10. Physics . . . . .	15	10	14
11. Chemistry . . . . .	19	17	19
12. Biology . . . . .	25	21	21
13. Geology . . . . .	9	10	14
14. American Archaeology and Ethnology . .	1	3	3
Unclassed Students . . . . .	7	19	10
	— 386	— 341	— 353
III. First-year Students . . . . .	186	181	189
Second-year Students . . . . .	72	85	83
Third-year Students . . . . .	44	38	52
Fourth-year Students . . . . .	20	24	14
Students in a fifth or later year . . . . .	14	13	15
	— 386	— 341	— 353

\* For detailed statistics as to the number of Graduate Students enrolled in the various courses of instruction offered by the Faculty of Arts and Sciences, see the Report of the Dean, pp. 62-77.

IV. A.B.'s and S.B.'s of Harvard University and of no other institution . . . . .	118	101	101
A.B.'s and S.B.'s (and holders of similar degrees) of other institutions and also of Harvard University . . . . .	84	38	38
Students not holding the Harvard degree of A.B. or S.B. . . . .	184	207	219
	— 386	— 341	— 358
Students holding the Harvard degree of A.M., S.M., Ph.D., or S.D. . . . .	102	108	100
Students holding the Harvard degree of A.B. or S.B., but not of A.M., S.M., Ph.D., or S.D.	97	84	88
Students holding no Harvard degree in Arts, Philosophy, or Science . . . . .	137	149	155
	— 386	— 341	— 358

Admission to the Graduate School is ordinarily granted to holders of the Bachelor's degree of good colleges and to a few other persons of maturity. Recent graduates of colleges where the course of study would not secure admission to the Senior Class of Harvard College, with or without conditions, and men from unknown colleges are commonly not admitted to the Graduate School, but are expected to seek admission as Undergraduates or as Special Students in Harvard College; if their record here justifies it, they are sometimes transferred to the School after the Mid-Year examination period. The Administrative Board accepts in all such cases the ruling of the Faculty's Committee on Admission from other Colleges. Although the degree of Bachelor of Arts is open to students in the Graduate School, it is the policy of the Board to advise recent graduates of other colleges who seek this degree to secure admission to the Senior Class. The colleges and universities that were represented in the School in 1900-01 are named in Tables IV-VI.

The foregoing Table (Table I) exhibits the usual classification of the students of the School and is given for convenience of comparison for the three successive academic years, 1898-99, 1899-1900, 1900-01.

Of the Resident Students three hundred and five were in attendance throughout the whole year. Of this number two hundred and twenty-six, including all holders of fellowships and scholarships, were engaged in what is defined as a complete year of work (four courses of advanced grade or their equivalent) or were doing a larger amount of work. Seventy-six of the number in residence throughout the year were doing partial work, which ranged from a course to three courses. Of the remaining thirty-seven Resident Students, twenty-three entered after November 1, 1900, and fourteen withdrew before the close of the year.

TABLE II. — RESIDENT STUDENTS DOING FULL WORK, AND NON-RESIDENT STUDENTS: 1886-1901.

	1886-87.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.	1899-1900.	1900-01.
Resident Students doing full work in the School for the whole academic year . . . . .	38	48	50	62	68	108	127	162	161	175	194	171	218	227	236
Resident Students not doing full work or not working for the whole year as resident students . . . . .	26	36	39	34	55	79	73	86	94	105	96	107	103	99	113
Whole number of Resident Students . . . . .	64	84	89	96	117	187	200	248	255	280	290	278	321	326	349
Non-Resident Students holding fellowships . . . . .	10	10	9	11	11	9	9	10	12	13	14	15	12	13	14
Non-Resident Students not holding fellowships . . . . .	4	3	1	4	4	4	7	1	5	6	2	..	3	2	..
Whole number of Non-Resident Students . . . . .	14	13	10	15	15	13	16	11	17	19	16	15	15	15	14
Whole number of students . . . . .	78	97	99	111	132	200	216	259	272	299	306	293	326	341	363
Percentage of Resident Students doing full work for whole academic year . . . . .	59	57	56	65	53	58	64	65	63	63	67	62	68	70	67



The subjoined Table (II) gives the statistics since 1886-87, when such statistics were first recorded, of Resident Students doing full or partial work, and of Non-Resident Students.

A Graduate School of Arts and Sciences differs essentially from a college, a technical, or a professional school, in that while in the latter a fixed amount of work is necessarily prescribed for each student and each student is expected to complete a well defined course which is to prepare him for his place or career among men, in the Graduate School no such requirement is imposed, except for candidates for degrees. In the Graduate School branches of learning and science are explored with a view less to professional expertness and attainment than to the enlargement and advancement of learning and science in and through the student. Consequently there will be many different types of men in a Graduate School, men of different aims and schemes of work, men who are able to devote their entire time and men who can give but a portion of it to their studies. Although it is through the former class that the School does its most effective work, the latter class is equally important and significant. It is therefore of interest to take special note of the minority — about one-fourth — of Resident Students who in 1900-01 were registered for less than full work. Of the seventy-six who in 1900-01 were doing partial work throughout the year, seventeen were teachers at this University either as assistants or as instructors; twenty were teachers in actual service in neighboring colleges or schools; four were clergymen in charge of congregations; three were students in a neighboring institution, and of the remaining twenty-two a good proportion were men who had nearly completed the requirements for one of the higher degrees and found it necessary to register only for a small amount of instruction. The value of the opportunities afforded by the Graduate School to students of all these classes should be more fully appreciated by the community. Many of the teachers referred to above were enrolled in the courses on Education and Teaching. There is no good reason why a much larger number of teachers in the colleges and schools of eastern Massachusetts might not avail themselves of the opportunities for advanced work that are offered by the Faculty of Arts and Sciences.

The class of Non-Resident Students included all holders of travelling fellowships and other fellowships held by students away from Cambridge, and in 1900-01 no other persons. In no year since the establishment of the Graduate Department in 1872 has the number of Non-Resident Students exceeded nineteen. And no degree is conferred by this University upon such students for work

done exclusively in absence. Such work if used for a degree must be supplementary to that done during at least one year of previous residence. In fact, the privilege of Non-Resident membership is open only to men who have already resided at the University for a satisfactory period.

The second division of Table I indicates in general the several fields of learning and science in which the work of the students chiefly lay. Classification here is difficult, since in the case of many students the work of each lies in more than one department, a fact that cannot be noted in this Table. Detailed information about the choice of studies of Graduate Students in the several departments may be obtained from the statistics which are given in the Report of the Dean of the Faculty of Arts and Sciences. The steady and almost uniform attraction that several of the great departments of learning exercise upon advanced students is apparent from the Table. In 1900-01 the subjects, arranged according to the number of students that pursued them, were:—

Modern Languages,	Chemistry,
Philosophy (including Education),	Physics,
History and Political Science,	Engineering,
Ancient Languages,	Fine Arts (including Architecture),
Natural History (Biology and Geology),	American Archaeology and Ethnology,
Mathematics,	Music.

The large proportion of men who were students of the languages, modern and ancient (36%), and of the historical and philosophical sciences (37%), as against the students of the mathematical, physical and natural sciences (27%), is at least noteworthy. The recent great growth of the School has been divided with remarkable unevenness between the languages and the historical and philosophical sciences on the one hand, and the mathematical, physical, and natural sciences on the other. In this the experience of this School has been different from that of most other Graduate institutions of learning.<sup>1</sup>

An inspection of the next division of the Table (and of Table III, below) shows that the proportion of students who were in the School for a second year has been slightly reduced, while that of students remaining for the third year has increased. As in the past, somewhat more than one-half of the members of the School have been in it but one year. Somewhat more than half of these received the

<sup>1</sup> A table of statistics for this University is given in the *Harvard Graduates' Magazine*, December, 1900, p. 286.

degree of Master of Arts at the close of the year. About one-fourth have been in the School for two years only, while nearly the same number have been in it for three or more years. It must be remembered that for many of the First-year Students — those who have pursued graduate study elsewhere — their first year at this University is really often a second or a third year of graduate study. Table III

TABLE III. — PERCENTAGES OF STUDENTS IN THEIR FIRST AND FOLLOWING YEARS: 1896-1901.

	1896-97.	1897-98.	1898-99.	1899-1900.	1900-01.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
First-year Students . . . . .	51	51	55	53	54
Second-year Students . . . . .	23	25	21	25	23
Third-year Students . . . . .	16	15	13	11	15
Fourth-year Students and Students of longer residence . .	10	9	11	11	8

shows that for the last five years the proportion of Second-year, Third-year, and Fourth-year Students has been remarkably uniform, while that of First-year Students has only slightly increased. It is clear that men who resort to the Graduate School for only one year of work are likely to continue to be the majority of its students, and it is desirable that steps should be taken to make as effective as possible this single year at the University.

The members of the Graduate School are for the most part a company of rather mature young men, who have devoted a considerable time, since receiving their first degree, to intellectual work either as teachers or as Graduate Students here or elsewhere. For of the First-year Students in 1900-01, less than thirty per cent. had entered the School immediately on receiving their first degree (54); about twelve per cent. had received this degree in 1899 (23); about eleven per cent. in 1898 (22); about ten per cent. in 1897 (20), while the remainder — about thirty-seven per cent. (70) — had received this degree in 1896 or earlier, four or more years before they entered the School. With hardly an exception the seventy per cent. who had been one or more years out of college before coming to the School had been carrying on graduate studies at other colleges or universities or had been engaged in teaching, or both. The Graduate School as yet appears to make no strong appeal to very young men, in the Senior classes either of Harvard College or of other colleges.

TABLE IV. — COLLEGES AND UNIVERSITIES, WITH DEGREES HELD.

	A.B.	S.B.	Litt.B.	Ph.B.	A.M.	S.M.	Ph.D.	S.T.B.	LL.B.	M.D.	No. De- grees.	No. Per- sons.
Acadia University, N. S.	8	.	.	.	1	.	.	.	.	.	4	3
Albany Law School, N. Y.	.	.	.	.	.	.	.	.	1	.	1	1
Allegheny College, Pa.	2	.	.	.	.	.	.	.	.	.	2	2
Amherst College, Mass.	7	3	.	.	.	.	.	.	.	.	10	10
Antioch College, O.	1	.	.	.	.	.	.	.	.	.	1	1
Bates College, Me.	8	.	.	.	1	.	.	.	.	.	4	3
Beloit College, Wis.	2	1	.	.	.	.	1	1	.	.	4	4
Boston University, Mass.	8	.	.	.	2	.	.	.	.	.	8	5
Bowdoin College, Me.	9	.	.	.	8	.	.	.	.	.	12	9
Brown University, R. I.	10	.	.	.	1	.	.	.	.	.	12	11
Bucknell University, Pa.	2	.	.	.	1	.	.	.	.	.	3	2
California, University of*	2	2	1	.	.	1	.	.	.	.	10	7
Cambridge, University of, Eng.	1	.	.	.	.	.	.	.	.	.	1	1
Carleton College, Minn.	1	.	.	.	.	.	.	.	.	.	1	1
Central Pennsylvania College	.	1	.	.	.	1	.	.	.	.	2	1
Chicago, University of, Ill.	1	.	.	.	.	.	.	.	.	.	3	3
Cincinnati, University of, O.	.	.	1	.	.	.	.	.	.	.	1	1
Colby College, Me.	3	.	.	.	1	.	.	.	.	.	4	3
Colgate University, N. Y.	1	.	.	.	1	.	.	.	.	.	2	1
Colorado, University of	.	.	.	.	.	1	.	.	.	.	1	1
Columbia University, N. Y.	.	.	.	.	.	.	.	.	.	.	1	1
Columbian University, D. C.	2	.	.	.	1	.	.	.	.	.	3	3
Cornell University, N. Y.	1	.	.	.	.	1	.	.	.	.	1	1
Dalhousie University, N. S.	3	1	.	.	2	1	.	.	.	.	7	4
Dartmouth College, N. H.	5	.	1	.	.	.	.	.	.	.	6	6
Delaware College	1	.	.	.	.	.	.	.	.	.	1	1
Denison University, O.	.	1	.	.	.	1	.	.	.	.	2	1
De Pauw University, Ind.	1	.	.	.	.	.	.	.	.	.	2	2
Dickinson College, Pa.	2	.	.	.	2	.	.	.	.	.	4	4
Drake University, Ia.	1	.	.	.	1	.	.	.	.	.	2	1
Drew Theological Seminary, N. J.	.	.	.	.	.	.	.	1	.	.	1	1



TABLE IV. — CONTINUED.

	A.B.	S.B.	Litt.B.	Ph.B.	A.M.	S.M.	Ph.D.	S.T.B.	LL.B.	M.D.	No. De- grees.	No. Per- sons.
Nebraska, University of	2	1	1		2						6	4
Nebraska Wesleyan University	1										1	1
New Brunswick, University of	4				1						5	4
New Mexico, University of					1						1	1
New York University		1		1							2	2
North Carolina, University of	1										1	1
Northern Indiana Normal School	1										1	1
Northwestern University, Ill.	3			1	2				1		7	5
Oberlin College, O.	4	1		4	2						11	9
Ohio Normal University	1										1	1
Ohio State University	1	1				1					2	1
Ohio University*				1							8	1
Ohio Wesleyan University	2	2			1		1				6	3
Ottorbein University, O.	1										1	1
Oxford, University of, England			1								1	1
Paris, University of, France							1				1	1
Pennsylvania, University of	1	4									6	5
Pomona College, Cal.	1										1	1
Princeton University, N. J.	2				1						3	3
Pritchett College, Mo.	1				1						2	1
Queen's University, Ont.					1				1		2	1
Richmond College, Va.	1										1	1
Rutgers College, N. J.	1						1				1	1
Strasburg, University of, Germany											1	1
Texas, University of	2	1			3						6	3
Toronto, University of, Ont.	6				1						7	6
Trinity College, Conn.	2										2	2
Trinity College, N. C.	3				2						5	3
Tufts College, Mass.	4				2						6	5
Ursinus College, Pa.	1										1	1
Utah, University of		1									1	1

Vanderbilt University, Tenn.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	1
Vermont University of	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1
Victoria University, Eng.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1
Virginia University of *	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	1
Wabash College, Ind.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	1
Washington College, Kan.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1
Washington and Jefferson College, Pa.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1
Washington University, Mo.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	2	2
Waynesburg College, Pa.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	2
Wesleyan University, Conn.	5	.	.	.	.	1	.	.	.	.	.	.	.	.	.	7	6
Western Reserve University, O.	2	.	.	1	.	1	.	.	.	.	.	.	.	.	.	4	3
Westfield College, Ill.	.	1	.	.	.	.	.	.	1	.	.	.	.	.	.	2	1
West Virginia University	3	.	.	.	.	.	.	.	.	1	.	.	.	.	.	5	3
Williams College, Mass.	6	.	.	.	.	.	.	.	2	.	.	.	.	.	.	8	6
Wisconsin University of *	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	3	2
Wittenberg College, O.	1	.	.	.	.	.	.	1	.	.	.	.	.	.	.	2	1
Wooster University of, O.	1	.	.	.	.	.	.	1	.	.	.	.	.	.	.	2	2
Worcester Polytechnic Institute, Mass.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	3	2
Yale University, Conn.	5	.	.	.	.	.	.	.	.	1	.	.	.	.	1	9	7
Total . . . . .	308	43	11	23	177	15	90	5	5	1						467	
Non-Graduates and other Graduates (see note) . . . . .																16	
Deduct for names counted twice or thrice . . . . .																483	190
																363	

\* Besides the degrees enumerated above, the following were held by one or two persons, as indicated: Litt.D., Penn College, Pa.; Litt.M. (2), University of California, and University of Wisconsin; Heb.B. and Rabbi, Hebrew Union College, O.; Mech. Eng., University of Virginia; Fed.B. (2), New York State Normal College, and Ohio University; Ph.M. (2), Iowa Agricultural College, and Ohio University; S.D.B., Missouri State Normal School, Warrensburg. There were, further, in the School one Graduate each of Andover Theological Seminary, Mass.; Newton Theological Institution, Mass.; Reformed Presbyterian Theological Seminary, Pa.; and Rochester Theological Seminary, N. Y. Columbia University, N. Y., Harvard University, and the University of Virginia were each represented by one Non-Graduate; Clark University, Mass., by a student who has since received the degree of Ph.D. from that institution. There were two students from European universities who had received no academic degree. Two students who had no college training were admitted to the School on special grounds.

TABLE IV.—CONTINUED.

	A.B.	S.B.	Litt.B.	Ph.B.	A.M.	S.M.	Ph.D.	S.T.B.	LL.B.	M.D.	No. De- grees.	No. Per- sons.
Nebraska, University of	2	1	1		2						6	4
Nebraska Wesleyan University	1										1	1
New Brunswick, University of	4				1						5	4
New Mexico, University of					1						2	1
New York University		1		1							2	2
North Carolina, University of	1										1	1
Northern Indiana Normal School	3			1	2						1	1
Northwestern University, Ill.	3			1	2				1		7	5
Oberlin College, O.	4	1		4							11	9
Ohio Normal University	1										1	1
Ohio State University	1	1				1					2	1
Ohio University*				1							3	1
Ohio Wesleyan University	2	2			1		1				6	3
Otterbein University, O.	1										1	1
Oxford, University of, England			1								1	1
Paris, University of, France							1				1	1
Pennsylvania, University of	1	4									1	5
Pomona College, Cal.	1										1	1
Princeton University, N. J.	2				1						3	3
Pritchett College, Mo.	1				1						2	1
Queen's University, Ont.					1				1		2	1
Richmond College, Va.	1										1	1
Rutgers College, N. J.	1										1	1
Strasburg, University of, Germany							1				1	1
Texas, University of	2	1			3						6	3
Toronto, University of, Ont.	6				1						7	6
Trinity College, Conn.	2										2	2
Trinity College, N. C.	3				2						5	3
Tufts College, Mass.	4				2						6	5
Ursinus College, Pa.	1										1	1
Utah, University of		1									1	1



Vanderbilt University, Tenn.	1																	2	1			
Vermont University of Victoria University, Eng.		1							1										1	1		
Virginia University of*	1								1										1	1		
Wabash College, Ind.	1								1										2	1		
Washington College, Kan.	1																		1	1		
Washington and Jefferson College, Pa.	1								1										2	2		
Washington University, Mo.		1																	2	2		
Waynesburg College, Pa.	1								1										7	6		
Wesleyan University, Conn.	5																		4	3		
Western Reserve University, O.	2								1										2	1		
Westfield College, Ill.														1					4	8		
West Virginia University																			2	1		
Williams College, Mass.	6																1		5	3		
Wisconsin University of*												2							8	6		
Wittenberg College, O.	1																		3	2		
Wooster University of, O.	1									1									2	1		
Worcester Polytechnic Institute, Mass.	1																		2	2		
Yale University, Conn.	5																		3	2		
<b>Total</b>	<b>308</b>	<b>43</b>	<b>11</b>	<b>23</b>	<b>177</b>	<b>15</b>	<b>30</b>	<b>5</b>	<b>5</b>	<b>1</b>	<b>467</b>											
<b>Non-Graduates and other Graduates (see note)</b>																					<b>16</b>	
<b>Deduct for names counted twice or thrice</b>																						<b>488</b>
																						<b>190</b>
																						<b>363</b>

\* Besides the degrees enumerated above, the following were held by one or two persons, as indicated: Litt.D., Penn College, Pa.; Litt.M. (2), University of California, and University of Wisconsin; Heb.B. and Rabbi, Hebrew Union College, O.; Mech. Eng., University of Virginia; Fed.B. (2), New York State Normal College, and Ohio University; Ph.M. (2), Iowa Agricultural College, and Ohio University; S.D.P., Missouri State Normal School, Warrensburg. There were, further, in the School one Graduate each of Andover Theological Seminary, Mass.; Newton Theological Institution, Mass.; Reformed Presbyterian Theological Seminary, Pa.; and Rochester Theological Seminary, N. Y. Columbia University, N. Y., Harvard University, and the University of Virginia were each represented by one Non-Graduate; Clark University, Mass., by a student who has since received the degree of Ph.D. from that institution. There were two students from European universities who had received no academic degree. Two students who had no college training were admitted to the School on special grounds.

The fourth division of Table I shows in general the extent to which the School draws its members from Harvard University, as contrasted with other institutions (for detailed information on this point Tables IV, V, and VI should be consulted). About fifty-six per cent. of the students of the School held a degree from Harvard University. About sixty-two per cent. of the members of the School did not hold the first Harvard degree in Arts or Science. The increase in the membership of the School has been of late years due almost entirely to persons who hold no Harvard degree.

	1896-97.	1897-98.	1898-99.	1899-1900.	1900-01.
Percentage of Students holding no Harvard degree . .	40	40	41	44	44
Percentage of Students holding no Harvard first degree in Arts . . . . .	52	55	55	61	62

Tables IV-VIII supplement each other and show in detail the extent to which the different higher institutions and different parts of the country are represented in the Graduate School. In Table IV are given the various colleges and universities and the professional and technical schools whose graduates were members of the School in 1900-01, together with the degrees these men held and the number of different men from each institution.

These Tables show that Harvard University continues to draw its Graduate Students from the whole country, and, to a slight extent, from foreign countries, a larger number of institutions being represented in the School than in any previous year.

The most common degree held by members of the School was that of Bachelor of Arts; next, that of Master of Arts. Of the three hundred and eighty-four Bachelor degrees in the School, three hundred and four were Bachelor of Arts and forty-two Bachelor of Science. As compared with previous years the proportion of Bachelors of Science as against Bachelors of Arts is slightly, though only slightly, increasing. There were one hundred and seventy-seven Masters of Arts, fifteen Masters of Science, and twenty Doctors of Philosophy in the School in 1900-01, as against one hundred and sixty-seven Masters of Arts, thirteen Masters of Science, and eight Doctors of Philosophy in 1899-1900. The increasing popularity of the degree of Master of Science deserves note.

The number of colleges that send each year a considerable group of students to the Graduate School is remarkably constant (Table V).

TABLE V. — COLLEGES AND UNIVERSITIES REPRESENTED BY FOUR OR MORE GRADUATES IN THE SCHOOL:  
1896-97, 1897-98, 1898-99, 1899-1900, 1900-01.

1896-97.	1897-98.	1898-99.	1899-1900.	1900-01.
Harvard, 174	Harvard, 178	Harvard, 198	Harvard, 191	Harvard, 197
Kansas, 8	Kansas, 7	Yale, 10	California, 8	Brown, 11
Wesleyan (Conn.), 8	Brown, 7	Brown, 8	California, 7	Amherst, 10
Amherst, 7	California, 6	California, 8	Amherst, 7	Bowdoin, 9
California, 7	Dartmouth, 6	Leland Stanford Jr., 7	Michigan, 6	Oberlin, 9
Oberlin, 7	Vermont, 6	Toronto, 7	Leland Stanford Jr., 6	California, 7
Dartmouth, 6	Amherst, 5	Bowdoin, 6	Northwestern, 6	Illinois, 7
Indians, 6	Northwestern, 5	Northwestern, 6	Brown, 5	Michigan, 7
Brown, 5	Oberlin, 5	Tufts, 5	Brown, 5	Yale, 7
Tufts, 5	Princeton, 5	Amherst, 5	Haverford, 5	Dartmouth, 6
Bowdoin, 4	Toronto, 5	Haverford, 5	Pennsylvania, 5	Toronto, 6
Leland Stanford Jr., 4	Wesleyan (Conn.), 5	Indiana, 5	Toronto, 5	Toronto, 6
Michigan, 4	Western Reserve, 5	Iowa, 5	Tufts, 5	Wesleyan (Conn.), 6
Vermont, 4	Western Reserve, 4	Low, 5	Wesleyan (Conn.), 5	Williams, 6
Western Reserve, 4	Acadia, 4	Kansas, 5	Beloit, 4	Boston Univ., 5
	Indiana, 4	Michigan, 4	Boston Univ., 4	Kansas, 5
	Leland Stanford Jr., 4	Western Reserve, 4	Boston Univ., 4	Northwestern, 5
	Mase. Inst. Tech., 4		Bowdoin, 4	Northwestern, 5
	Ohio Wesleyan, 4		Colby, 4	Pennsylvania, 5
	Yale, 4		Dalhousie, 4	Pennsylvania, 5
			Indiana, 4	Tufts, 5
			Kansas, 4	Beloit, 4
			Nebraska, 4	Dalhousie, 4
			Rochester, 4	Haverford, 4
			Western Reserve, 4	Nebraska, 4
			Williams, 4	New Brunswick, 4
			Yale, 4	
Total Membership, 306	293	336	341	353

Leaving Harvard graduates out of consideration, it appears that in 1896-97 there were fourteen colleges represented in the School by four or more graduates; in 1897-98 there were eighteen; in 1898-99, fifteen; in 1899-1900, twenty-four; and in 1900-01, twenty-three.

The colleges and universities that have been steadiest in the supply of Graduate Students for the past four years, each sending from four to eleven students every year, are: Amherst, Brown, California, Kansas, Northwestern, Toronto, and Yale.

Five members of the Graduate School were holders of fellowships or scholarships which had been offered by other institutions or organizations: namely, scholarships of the Harvard Clubs of Chicago, San Francisco, and St. Louis, awarded to competent graduates of local colleges who entered the Graduate School; travelling fellowships from Dalhousie University (the Exhibition Science Scholarship) and from the University of Pennsylvania (the Hector Tyndale Fellowship).

A large number of the Resident Students in the Graduate School had pursued graduate studies at other American colleges and universities and at foreign universities. For such work in a number of cases they held degrees. Many of these men became or are to become candidates for the Doctor's degree at this University, and Graduate studies pursued at another university are accepted, if properly attested and otherwise satisfactory to the respective Divisions of the Faculty, in partial fulfilment of the requirement of at least two years of Graduate study for the degree, one of these years being, according to the statute, spent in residence at this University.

In 1899-1900 one hundred and eight of the members of the School, or nearly one-third, had carried on Graduate studies elsewhere. In 1900-01 one hundred and thirty-nine, or about two-fifths of the members of the School, had already been Graduate Students elsewhere, and of these, fifty-eight had received degrees for these studies (A.M., S.M., or Ph.D.). One hundred and sixty-four had pursued similar studies at this University, for one or more years.

The colleges and universities at which three or more men in the Graduate School in 1900-01 had previously pursued Graduate studies are given in Table VI.

TABLE VI.—MIGRATION OF GRADUATE STUDENTS.

Harvard, 164,	Boston University, 3,
Chicago, 19 (including 8 summer students),	Clark, 3,
California, 6,	Dalhousie, 3,
Columbia, 5,	Michigan, 3,
Pennsylvania, 5,	Munich, 3,
Brown, 4,	Nebraska, 3,
Illinois, University of, 4,	Oberlin, 3,
Johns Hopkins, 4,	Wisconsin, 3,
Leipsic, 4,	Yale, 3.

Besides these, other colleges and universities where one or two members of the School had pursued Graduate studies are: Acadia, American School of Classical Studies at Athens, American School of Classical Studies in Rome, Bowdoin, Columbian, Cornell, Denison, Dickinson, Illinois College, Kansas, Miami, Minnesota, Mississippi, New Mexico, New York, Northwestern, Ohio State, Ohio, Ohio Wesleyan, Princeton, Toronto, Trinity (N. C.), Tufts, Virginia, Wesleyan (Conn.), Western Reserve, West Virginia, and Williams; and the following foreign universities: Berlin, Freiburg in Baden, Heidelberg, Jena, Paris, Tübingen, Vienna, and Zurich. To these should be added the theological seminaries at Allegheny (Reformed Presbyterian), Andover, Boston University, Cambridge (Episcopal), Hartford, and Rochester.

The fields of study of these migrating students were — for subjects in which there were seven or more — as follows: —

Philosophy, 26,	Modern Languages (not including English), 8,
Classics, 23,	Geology, 8,
History and Political Science, 21,	Chemistry, 8,
English Language and Literature, 13,	Physics, 8,
Natural History (Botany, Biology, etc.), 9,	Mathematics, 7.

A group of Graduate Students that might be classified with that of the migrants is that of teachers who are in the School upon leave of absence from their respective colleges or schools, and who expect to return to the positions they have left. They are men who for the most part have been successful, and in some cases have attained distinction, in their profession, and they come to the University for a year or two of advanced study in their special departments, the better to fit themselves for their chosen work. In 1900–01 twenty-three colleges were represented in the School by as many men, members of their Faculties on leave of absence; and five preparatory schools or other institutions of the same grade were similarly represented.

This enumeration does not include the large number of men in the School doing partial work who are actively engaged each in the pursuit of his profession in or near Boston, chiefly teachers in preparatory schools and colleges, and a few clergymen (see above, page 117). In the same category with these might be included a considerable number of the men who, being members of the Graduate

School, serve the University as instructors, teaching fellows, and assistants. In 1900-01 there were forty-seven such.

TABLE VII. — BIRTHPLACES OF GRADUATE STUDENTS: 1894-1901.

	1894-96.	1896-98.	1898-97.	1897-98.	1899-99.	1899-1900.	1900-01.
Students born in the New England States . . . . .	109	181	141	121	143	122	127
Students born in other Northern States east of the Mississippi River . . . . .	97	85	86	89	106	119	136
Students born in Southern States east of the Mississippi River . .	20	19	13	19	15	17	16
Students born in States west of the Mississippi River . . . . .	17	25	25	26	30	34	30
Students born in the Dominion of Canada . . . . .	16	16	17	18	25	23	21
Students born in other foreign countries . . . . .	18	23	24	20	17	26	23
Total number of students . .	272	299	306	293	336	341	353
Percentage of students born in New England . . . . .	40	44	46	41	43	36	36
Percentage of students born elsewhere . . . . .	60	56	54	59	57	64	64

TABLE VIII. — RESIDENCES OF GRADUATE STUDENTS: 1899-1901.

	1899-1900.	1900-01.
New England States . . . . .	154	167
Northern States east of the Mississippi River . . . . .	94	99
Southern States east of the Mississippi River . . . . .	22	16
States west of the Mississippi River . . . . .	45	46
Canada . . . . .	19	18
Foreign countries . . . . .	7	7
	<u>341</u>	<u>353</u>

These Tables (VII, VIII) show that nearly two-thirds of the members of the School in 1900-01 were born out of New England, and that the proportion of such men is on the increase. On the other hand nearly one-half of the students claim residence in New England. A comparison of these two Tables shows accordingly that a considerable number of persons not of New England birth have immigrated into it.

## DEGREES.

One hundred and sixty-two persons were recommended\* for the higher degrees at Commencement, 1901.

The details are found in the following Table (IX), which gives in the first and second parts the number of students in the Graduate School recommended by the Faculty of Arts and Sciences for any degree, and the number of other students recommended for the degree of Master of Arts, Master of Science, and Doctor of Philosophy in the three years 1899, 1900, 1901. In the third part of the Table all persons recommended for the higher degrees (A.M., S.M., Ph.D., and S.D.) are classified with reference to their previous graduation as Bachelors of Arts or of Science.

TABLE IX.—RECOMMENDATIONS FOR DEGREES IN 1899–1901.

	1899.	1900.	1901.
I. Graduate students recommended for A.B. . . . .	8	10	13
Graduate students recommended for A.M. . . . .	97	106	92
Graduate students recommended for S.M. . . . .	6	1	9
Graduate students recommended for Ph.D. . . . .	21	35	29
Graduate students recommended for S.D. . . . .	1 133	1 153	0 143
II. College Seniors recommended for A.M. . . . .	2	0	1
College Seniors of a preceding year, recommended for A.M. on work done in Senior year	16	19	23
College Seniors of a preceding year, recommended for S.M. on work done in Senior year	0	1	0
Professional students recommended for A.M. on special courses of study . . . . .	8	7	8
Professional students recommended for Ph.D. on special courses of study . . . . .	2 28	0 27	0 32
Total of the above list . . . . .	161	180	175
Deduct Graduate students recommended for A.B. . . . .	8	10	13
Total number recommended for A.M., S.M., Ph.D., and S.D. . . . .	153	170	162
III. Harvard Bachelors of Arts or Science, not previously graduated elsewhere . . . . .	65	62	59
Harvard Bachelors of Arts or Science, previously graduated elsewhere . . . . .	20	22	20
Students not Harvard Bachelors of Arts or Science . . . . .	68 153	86 170	83 162

\* The number of persons recommended each year, and that of the men who actually receive the degree, as published in the Annual Catalogue, do not always agree. Usually a few of the candidates recommended do not receive the degree at once. The degree is in these cases ordinarily conferred in a later year, "as of" the year in which the recommendation was made.

Two remarks may be made upon this Table. The number of college Seniors who receive the degree of Master of Arts for work done in their Senior year in excess of the requirement for the Bachelor's degree is rapidly increasing. (In 1897 there were six; in 1898, nine; in 1899, sixteen; in 1900, nineteen; in 1901, twenty-three.) These men have in reality usually completed the course of study for the Bachelor's degree in three years, but they prefer to receive this degree not at the close of the third year, but at that of the fourth year with their college class. The Master's degree is conferred without further residence and study at the end of the fifth year, and is thus known as a "postponed A.M." In my opinion these men should be catalogued in such a way as to indicate their peculiar relation both to the Bachelor's degree and to the Master's degree.

Attention also should be called to the gradual increase in the proportion of non-Harvard men (that is, men who do not hold the Harvard Bachelor's degree) that are promoted to the higher degrees. In 1901 over 51% of the men recommended for higher degrees held no first degree from Harvard; in 1900 about 50%; in 1899 the proportion was 44%.

The next Table (X) indicates the departments or fields of study in which lay the chief work of the candidates for the degrees of Master of Arts, Master of Science, Doctor of Philosophy, and Doctor of Science.

TABLE X. — DIVISIONS AND DEPARTMENTS IN WHICH RECOMMENDATIONS FOR THE HIGHER DEGREES WERE MADE IN 1901.

DIVISION.	DEPARTMENT.	DEGREES.			
		A.M.	S.M.	PH.D.	S.D.
I. Semitic Languages and History . . . . .		..	..	..	..
II. Ancient Languages :					
Indo-Iranian Languages . . . . .		..	..	..	..
The Classics (Greek, Latin) . . . . .	13	..	5	..	..
Total in Ancient Languages . . . . .	— 13	— ..	— 5	— ..	— ..
III. Modern Languages :					
English . . . . .	14	..	1	..	..
Germanic Languages and Literatures . . . . .	5	..	1	..	..
French, and other Romance Languages and Literatures . . . . .	6	..	1	..	..
In more than one Department . . . . .	3	..	..	..	..
Total in Modern Languages . . . . .	— 28	— ..	— 3	— ..	— ..
IV. History and Political Science :					
History and Government . . . . .	24	..	2	..	..
Political Economy . . . . .	9	..	2	..	..
Total in Hist. and Political Sci. . . . .	— 33	— ..	— 4	— ..	— ..



DIVISION.	DEPARTMENT.	DEGREES.			
		A.M.	S.M.	PH.D.	S.D.
V. Philosophy . . . . .		18	..	5	..
[Education . . . . .		3]			
VI. Fine Arts . . . . .		..	..	..	..
VII. Music . . . . .		..	..	..	..
VIII. Mathematics . . . . .		1	..	2	..
IX. Engineering . . . . .		1	1	..	..
X. Physics . . . . .		2	1	3	..
XI. Chemistry . . . . .		4	..	2	..
XII. Biology :					
Botany . . . . .		1	2	..	..
Zoölogy . . . . .		3	1	3	..
Total in Biology . . . . .		— 4	— 3	— 3	— ..
XIII. Geology :					
Geology and Geography . . . . .		4	2	1	..
Mineralogy and Petrography . . . . .		..	..	1	..
Mining and Metallurgy . . . . .		..	2	..	..
Total in Geology . . . . .		— 4	— 4	— 2	— ..
XIV. American Archaeology and Ethnology . . . . .		1	..	..	..
In more than one Division . . . . .		7	..	..	..
Professional Students :					
Divinity School . . . . .		5	..	..	..
Law School . . . . .		2	..	..	..
Medical School . . . . .		1	..	..	..
Total . . . . .		124	9	29	..

The degree of Doctor of Philosophy was conferred upon the twenty-nine persons named below. With each name are given the special field in which the degree was taken, the candidate's academic history, the subject of his thesis, and his present occupation.

#### Philology.

##### WILLIAM WILSON BAKER.

Classical Philology.—A.B. *summa cum laude* 1898, A.M. 1899.—Res. Gr. Stud., 1898-1901. Thesis: "Quid de scriptis suis aliorumque indicarent Comici Græci." Instructor in Latin in this University.

##### JOHN TAGGART CLARK.

Romance Philology.—A.B. *magna cum laude* 1898, A.M. 1899.—Res. Gr. Stud., 1898-1901. Thesis: "An Examination of the Development of Medial Consonants in Italian, with Special Reference to the Question of Accent Influence." Now studying Romance Philology in Paris, as Rogers Fellow.

##### CHARLES NELSON COLE.

Classical Philology.—A.B. (*Illinois Wesleyan Univ.*) 1894, A.M. (*Univ. of Illinois*) 1897, A.M. (*Harvard Univ.*) 1898.—Res. Gr. Stud., 1897-99. Thesis: "De Vergilio Catulli Imitatore." Instructor in Latin, Cornell University, Ithaca, N.Y.

##### HOMER JAMES EDMISTON.

Classical Philology.—A.B. (*Univ. of Nebraska*) 1892, A.M. (*Harvard Univ.*) 1899.—Res. Gr. Stud., 1898-1901. Thesis: "Aristotelis Poeticam quibus modis scriptores ætate inferiores prave interpretati sunt quæritur." Associate in Latin, Bryn Mawr College, Bryn Mawr, Pa.

##### ROBERT HUNTINGTON FLETCHER.

English Philology.—A.B. (*Dartmouth Coll., N.H.*) 1896, A.M. (*Harvard Univ.*) 1898.—Res. Gr. Stud., 1897-98, 1899-1901. Thesis: "The Arthurian Material in the Chronicles of Great Britain." Now studying English Philology in Europe, as John Thornton Kirkland Fellow.

##### CARL NEWELL JACKSON.

Classical Philology.—A.B. *magna cum laude* 1898, A.M. 1899.—Res. Gr. Stud., 1898-1901. Thesis: "Quas Partes Equi habebant in Religionibus Græcorum?" Now studying Classical Philology in Berlin, as Rogers Fellow.

**HENRY WASHINGTON PRESCOTT.**

Classical Philology.—A.B. *summa cum laude* 1895, A.M. 1896.—Res. Gr. Stud., 1895-96.  
Thesis: "De Daphnide Commentatio."  
Instructor in Latin, University of California, Berkeley, Cal.

**JOHN CHRISTIAN RANSMEIER.**

Germanic Philology.—Ph.B. (*Northwestern Univ., Ill.*) 1894, A.M. (*Harvard Univ.*) 1896.—Res. Gr. Stud., 1897-1901.  
Thesis: "The Element of Revolt in the Thought of Johann Christoph Friedrich Hilderlin."  
Instructor in German, Williams College, Williamstown, Mass.

**Philosophy.****MILTON EUGENE BLANCHARD.**

Logic and Metaphysics.—Litt.B. (*Univ. of California*) 1887, A.B. (*ibid.*) 1893, A.M. (*Harvard Univ.*) 1900.—Res. Gr. Stud., 1899-1901.

Thesis: "The Negative Principle in Logic, Mathematics, and Ethics."  
Principal of the Hancock Grammar School, San Francisco, Cal.

**LEWIS CLINTON CARSON.**

Metaphysics and Epistemology.—A.B. (*Univ. of Michigan*) 1892, A.B. (*Harvard Univ.*) 1898, A.M. (*Univ. of Michigan*) 1899, A.M. (*Harvard Univ.*) 1900.—Res. Gr. Stud., 1898-1901.

Thesis: "The Object of Knowledge: A Dissertation in Philosophical Transcendence."  
Assistant in Philosophy in this University.

**THOMAS HARVEY HAINES.**

Psychology.—S.B. (*Haverford Coll., Pa.*) 1896, A.M. (*ibid.*) 1897, A.M. (*Harvard Univ.*) 1898.—Res. Gr. Stud., 1897-1901.

Thesis: "The Temporal Relations of Mental Processes: An Experimental Study of Objective and Subjective Simultaneity."  
Assistant Professor of Psychology, Ohio State University, Columbus, O.

**EDWIN BISSELL HOLT.**

Psychology.—A.B. *magna cum laude* 1896, A.M. (*Columbia Univ., N.Y.*) 1900.—Res. Gr. Stud., 1897-98, 1900-01.

Thesis: "The Motor Element in Vision."  
Instructor in Psychology in this University.

**RAYMOND HERBERT STETSON.**

Psychology.—Ph.B. (*Oberlin Coll., O.*) 1893, A.M. (*ibid.*) 1896.—Res. Gr. Stud., 1899-1901.

Thesis: "Rhythm and Rhyme."  
Instructor in Philosophy, Tabor College, Tabor, Ia.

**History.****JONAS VILES.**

Constitutional History of England from 1550 to 1600.—A.B. *magna cum laude* 1896, A.M. 1897.—Res. Gr. Stud., 1898-1901.

Thesis: "The Privy Council of Elizabeth: A Partial Study of some of its Administrative Functions."  
Engaged in study and research in England.

**ARTHUR HERBERT WILDE.**

France in the Merovingian Period.—A.B. (*Boston Univ.*) 1887, S.T.B. (*ibid.*) 1891, A.M. (*Harvard Univ.*) 1899.—Res. Gr. Stud., 1891 and 1898-1900.

Thesis: "The Administration of the Schools of Gaul from the Fourth Century to the Reforms of Charlemagne."  
Assistant Professor of History, Northwestern University, Evanston, Ill.

**Political Science.****DON CARLOS BARRETT.**

Money.—Ph.B. (*Earlham Coll., Ind.*) 1889, A.M. (*ibid.*) 1893, A.M. (*Harvard Univ.*) 1896.—Res. Gr. Stud., 1895-97.

Thesis: "The Origin and Supposed Necessity of the United States Notes."  
Associate Professor of Political Science, Haverford College, Haverford, Pa.

**HERBERT CAMP MARSHALL.**

Economic History of the United States.—A.B. (*Ohio Wesleyan Univ.*) 1891, A.B. (*Harvard Univ.*) 1894, A.M. (*ibid.*) 1896.—Res. Gr. Stud., 1894-98.

Thesis: "The Currency and the Movement of Prices in the United States from 1860 to 1880."

Third-year Law Student in this University.

**Mathematics.****CHARLES WILLIAM MCGOWAN BLACK.**

Analysis.—A.B. (*Dickinson Coll., Pa.*) 1889, A.M. (*ibid.*) 1892, A.M. (*Harvard Univ.*) 1896.—Res. Gr. Stud., 1898-1901.

Thesis: "The Parametric Representation of the Neighborhood of a Singular Point of an Analytic Surface."  
Instructor in Mathematics, University of Oregon.

**CHARLES NELSON HASKINS.**

Lie's Theory of Continuous Groups.—S.B. (*Mass. Institute of Technology*) 1897, S.M. (*Harvard Univ.*) 1899, A.M. (*ibid.*) 1900.—Res. Gr. Stud., 1898-1901.

Thesis: "On the Invariants of Quadratic Differential Forms."  
Now studying Mathematics at Göttingen, as Harris Fellow.

**Physics.****CHARLES HAMILTON AYRES, JR.**

Electricity.—A.B. *magna cum laude* 1896, A.M. 1899.—Res. Gr. Stud., 1898-1901.

Thesis: "Measurement of the Internal Resistance of Galvanic Cells."  
Instructor in Physics in this University.

**GEORGE ASHLEY CAMPBELL.**

Electricity.—S.B. (*Mass. Institute of Technology*) 1891, A.B. (*Harvard Univ.*) 1892, A.M. (*ibid.*) 1898.—Res. Gr. Stud., 1891-93.

Thesis: "On Loaded Lines in Telephonic Transmission."  
Electrical Engineer with the American Bell Telephone Co., Boston, Mass.

**CLARENCE AUGUSTUS CHANT.**

Electro-Optics.—A.B. (*Univ. of Toronto, Ont.*) 1890, A.M. (*ibid.*) 1900.—Res. Gr. Stud., 1900-01.

Thesis: "The Skin-effect in Electric Oscillators: with a Method of Determining Wave-lengths."  
Lecturer in Physics, University of Toronto.

**Chemistry.****GEORGE WILLIAM HEIMROD.**

Physical Chemistry.—A.B. *summa cum laude* 1898, A.M. 1899.—Res. Gr. Stud., 1898-1901.

Thesis: "The Silver Voltmeter."  
Now studying Chemistry in Europe, as Parker Fellow.

**BENJAMIN SHORES MERIGOLD.**

Inorganic Chemistry. — A.B. 1896, A.M. 1897.  
 — Res. Gr. Stud., 1896-1900.  
 Thesis: "A Revision of the Atomic Weight of Uranium."  
 Instructor in Chemistry, Worcester Polytechnic Institute, Worcester, Mass.

**Biology.****MAURICE ALPHEUS BIGELOW.**

Zoology. — A.B. (*Ohio Wesleyan Univ.*) 1894, S.M. (*Northwestern Univ., Ill.*) 1896. — Res. Gr. Stud., 1896-99.  
 Thesis: "The Early Development of Lepas: A Study of Cell-Lineage and Germ-Layers."  
 Instructor in Biology, Teachers' College, Columbia University, New York.

**ROBERT WILLIAM HALL.**

Zoology. — Ph.B. (*Yale Univ., Conn.*) 1895, A.B. *cum laude*. (*Harvard Univ.*) 1897, A.M. (*ibid.*) 1898. — Res. Gr. Stud., 1898-99.  
 Thesis: "The Development of the Mesonephros and the Müllerian Ducts in Amphibia."  
 Instructor in Biology, Sheffield Scientific School of Yale University.

**REUBEN MYRON STRONG.**

Zoology. — A.B. (*Oberlin Coll., O.*) 1897, A.M. (*Harvard Univ.*) 1899. — Res. Gr. Stud., 1898-1901.  
 Thesis: "The Development of Color in the Definitive Feather."  
 Teacher of Biology, Morgan Park Academy, Ill.

**Geology.****ERNEST HOWE.**

Petrographical Geology. — A.B. (*Yale Univ., Conn.*) 1898, A.M. (*Harvard Univ.*) 1899. — Res. Gr. Stud., 1898-1901.  
 Thesis: "The Era-Cambrian Intrusive Rocks of the Animas Canyon, Colorado."  
 Assistant Geologist in the U.S. Geological Survey.

**ALFRED WILLIAM GUNNING WILSON.**

Physical Geology. — A.B. (*Univ. of Toronto, Ont.*) 1898, A.M. (*Harvard Univ.*) 1899. — Res. Gr. Stud., 1898-1901.  
 Thesis: "Physical Geology of Central Ontario."  
 Recently Assistant in the Geological Survey of Canada; now continuing his geological studies in Europe.

Of these twenty-nine Doctors of Philosophy, twenty-one — or two-thirds of the whole number — are now engaged each in the pursuit of his profession. Except two — one an assistant in a scientific establishment of the United States Government, one engaged in business as an electrical engineer — all of the twenty-one are teachers either in colleges or universities (three are professors, fourteen are instructors or assistants), or in secondary institutions (two). Of these teachers only four are in the service of this University, as against twelve in the preceding year. All of the remaining eight Doctors of Philosophy are continuing their studies, one in a professional school of this University, and the remainder in Europe. Five of the latter are travelling fellows.

As the degree of Doctor of Philosophy at this University is based on the Harvard degree of Bachelor of Arts, or its equivalent, all the men recommended for the degree of Ph.D. held a degree in Arts, save one: he, though holding the degrees of Bachelor and Master of Science, had satisfied the requirements for the Harvard A.B. Twenty-six of the twenty-nine held Harvard degrees: one A.B. only, twelve A.B. and A.M., and thirteen A.M. only. All the candidates were Bachelors of Arts except six; four of these were Harvard A.M.'s.; one was an A.M. elsewhere, and the sixth was Bachelor and Master of Science of other universities.

In the case of twelve candidates, six or more years had elapsed since the candidate had received the Harvard A.B. or had been admitted to equivalent standing. Of the remaining seventeen, five were Harvard A.B.'s (or its equivalent) of five years' standing, four

of four years' standing, and eight of three years' standing, and none of a shorter period.

The period of resident study varied between one year (two candidates), and four years (four candidates); seven candidates had spent two years and sixteen had spent three years in residence. The two candidates who had been in residence but one year had each pursued Graduate studies for one or more years at other colleges or universities (Columbia, Toronto, Northwestern), and nearly all of the candidates whose residence was for two years only had had similar studies elsewhere. The departments in which the degree was conferred after but a single year of resident study were — each with one candidate — Biology and Physics. The departments in which the degree was conferred after but two years of resident study were Classics (one), History (one), Philosophy (three), Physics and Political Science (one each). The departments where three years were found necessary by some candidates were History, Biology, and Chemistry (one each), Classics (four), English (two), Geology (two), Germanic Philology (one), Mathematics and Philosophy (two each). The four remaining candidates, who had each devoted four years to preparation for the degree, were in the departments of Biology, Chemistry, Philosophy, and Political Science, respectively.

The average period of resident study for the Doctor's degree is thus, as in the case of the candidates in the two previous years, a little less than three years. The statistics for 1901, if compared with those for 1900 and 1899, appear to indicate that the period of time found necessary for preparation for the degree is being slightly reduced, and that men are proceeding to the degree sooner after receiving the A.B. degree. This is a good tendency.

Tables XI and XII give the age of Graduate Students recommended for the higher degrees at Commencement, 1901.

TABLE XI. — AGE OF GRADUATE STUDENTS RECOMMENDED FOR THE DEGREES OF MASTER OF ARTS, MASTER OF SCIENCE, AND DOCTOR OF PHILOSOPHY: 1901.\*

	20	21	22	23	24	25	26	27	28-34	35-39	40 or over	Total.
A.M.'s . .	1	3	9	10	12	8	6	6	25	7	4	91
S.M.'s . .	..	..	..	1	..	2	..	1	3	..	..	7
Ph.D.'s . .	..	..	..	..	1	3	5	3	14	3	..	29

\* Men recommended for "as of" degrees are not included.

TABLE XII. — AGE OF GRADUATE STUDENTS RECOMMENDED FOR THE DEGREE OF DOCTOR OF PHILOSOPHY: 1897-1901.

	22	23	24	25	26	27	28 or over
1897 . . . . .	. . .	. . .	3	1	4	2	15
1898 . . . . .	1	. . .	1	4	2	2	15
1899 . . . . .	1	4	2	3	2	1	8
1900 . . . . .	. . .	2	3	4	2	6	18
1901 . . . . .	. . .	. . .	1	3	5	3	17

The remarks made upon similar Tables in my last report hold true now. The average age of the normal Master of Arts (that is, a student who has continued his studies for the Master's degree immediately on receiving the Bachelor's degree or after an interval of only one year) is a little over twenty-four. The large group of men over twenty-seven who receive the Master's degree is not made up of laggards, but of persons who since receiving the Bachelor's degree have been actively engaged for the most part as teachers in different institutions, and have come to the University for a year or two of special study.

The Doctors of Philosophy are of course older. Clearly the age to which most candidates must postpone their examinations for the degree is too advanced. If the degree of Doctor of Philosophy is to be, not the luxury of a few with abundant leisure and opportunity for research and study, but at once the sign and prize, for the greater number of future teachers in American colleges and universities, of high scholarly character, of attainment and capacity for production, and of rigorous scientific training, it should be secured by the average candidate earlier than now. The normal age of Doctors of Philosophy, as for men generally who are to enter upon professional life at the fit time, is not far from twenty-five or twenty-six. The age is now much nearer thirty.

#### FELLOWSHIPS AND SCHOLARSHIPS.

The appointments to fellowships and scholarships for 1900-01 were made toward the close of the preceding academic year, chiefly in June, 1900. Similarly the appointments for the current year, 1901-02, were for the most part made within the academic year covered by the present report. The recommendations to fellowships and scholarships are made by the Faculty of Arts and Sciences on the nomination of its Committee on Fellowships and other Aids for

Graduate Students, and thus are a part of the business of that Faculty; but as the persons appointed are members of the Graduate School, information on this subject is always given in the reports of the Dean of the Graduate School.

Twenty-three\* fellowships and sixty-one scholarships were held by students in the Graduate School in 1900-01. With the fellowships are included the John Harvard Fellowships, without stipend, — two in 1900-01, — and the Travelling Fellowship in Botany (for 1900-01 only). The Ozias Goodwin Memorial and one of the Whiting Fellowships were vacant. Thirteen of the fellowships, including the two John Harvard Fellowships, were held by Non-Resident Students who pursued their studies abroad, — in England (3), France (1), Germany (8), and Italy (1); one in the United States away from Cambridge. Nine of the fellowships and all the scholarships were held by Resident Students.

For 1901-02 the appointments have been made to twenty-four fellowships and forty-nine scholarships.

The names of the holders of fellowships for the two academic years 1900-01 and 1901-02, with statements as to the present occupation of each, follow. The fellowships are arranged in the order of their foundation.

## 1900-1901.

## Harris Fellowship.

## CAMPBELL BONNER.

A.B. (*Vanderbilt Univ., Tenn.*) 1896, A.M. (*ibid.*) 1897, A.M. 1898, PH.D. (Classical Philology) 1900. — Res. Gr. Stud., 1897-1900; Non-Res. Stud., 1900-01. — University Scholar, 1897-98; George and Martha Derby Scholar, 1898-99; Morgan Fellow, 1899-1900. — Student of Classical Philology, in Germany.

Professor of Greek, Peabody Normal College of Vanderbilt University, Nashville, Tenn.

## 1901-1902.

## CHARLES NELSON HASKINS.

(See Morgan Fellowships, 1900-01.)

## Rogers Fellowships.

## ARTHUR CHARLES LEWIS BROWN.

A.B. (*Hobart Coll., N.Y.*) 1893, A.B. 1894, A.M. 1895, PH.D. (English Philology) 1900. — Res. Gr. Stud., 1894-95 and 1898-1900; Non-Res. Stud., 1900-01. — Shattuck Scholar, 1894-95; Thayer Scholar, 1898-99; Morgan Fellow, 1899-1900. — Student of Comparative Literature, in Europe.

Instructor in English, University of Wisconsin, Madison, Wis.

## JOHN TAGGART CLARK.

A.B. 1896, A.M. 1899, PH.D. (Romance Philology) 1901. — Res. Gr. Stud., 1898-1901. — University Scholar, 1898-99; Townsend Scholar, 1899-1900; Shattuck Scholar, 1900-01.

Student of Romance Languages, at Paris.

## EDWARD KENNARD RAND.

A.B. 1894, A.M. 1895, PH.D. (*Univ. of Munich, Germany*) 1900. — Res. Div. Stud., 1894-95; Non-Res. Gr. Stud., 1899-1901. — John Harvard Fellow, 1899-1900. — Student of Late Latin, at Munich.

Instructor in Latin, at this University.

## CARL NEWELL JACKSON.

A.B. 1896, A.M. 1899, PH.D. (Classical Philology) 1901. — Res. Gr. Stud., 1898-1901. — University Scholar, 1898-99; Townsend Scholar, 1899-1900; Shattuck Scholar, 1900-01.

Student of Classical Philology, at Berlin.

\* In these lists and enumerations the Austin teaching fellowships are not included; they are of the nature of instructorships or assistantships and are therefore taken note of in another place.

1900-01.

## Parker Fellowships.

## GILBERT NEWTON LEWIS.

A.B. 1896, A.M. 1898, PH.D. (Chemistry) 1899.  
— Res. Gr. Stud., 1897-99; Non-Res. Stud.,  
1900-01. — George and Martha Derby  
Scholar, 1897-98; Toppan Scholar, 1898-  
99. — Instructor in Chemistry, 1899-1900. —  
Student of Chemistry, at Leipsic.  
Instructor in Chemistry, at this University.

## EARLE RAYMOND HEDRICK.

*Reappointed.*

A.B. (*Univ. of Michigan*) 1896, A.M. 1898,  
PH.D. (*Univ. of Göttingen, Germany*)  
1901. — Res. Gr. Stud., 1897-99; Non-Res.  
Stud., 1899-1900. — Shattuck Scholar, 1897-  
98; Morgan Fellow, 1898-99. — Student of  
Mathematics, at Göttingen.  
Instructor in Mathematics, Sheffield Scien-  
tific School, Yale University.

## WILLIAM BENNETT MUNRO.

A.M. (*Queen's Univ., Ont.*) 1896, LL.B. (*ibid.*)  
1897, A.M. 1898, PH.D. (Political Science)  
1900. — Res. Gr. Stud., 1898-1900; Non-  
Res. Stud., 1900-01. — University Scholar,  
1898-99; Ozias Goodwin Memorial Fellow,  
1899-1900. — Student of History and Politi-  
cal Science, at Berlin.  
Instructor in History, Williams College.

## John Thornton Kirkland Fellowship.

## JESSE MORE GREENMAN.

*Reappointed.*

S.B. (*Univ. of Pennsylvania*) 1893, S.M. 1899,  
PH.D. (*Univ. of Berlin, Germany*) 1901. —  
Res. Gr. Stud., 1898-99; Non-Res. Stud.,  
1899-1901. — Assistant in the Gray Herbar-  
ium, 1894-99. — Student of Botany, in  
Berlin.

## James Walker Fellowship.

## EDWARD PARRISH CARR.

A.B. (*Univ. of North Carolina*) 1896, A.B.  
1897, A.M. 1898. — Res. Gr. Stud., 1897-  
1900; Non-Res. Stud., 1900-01. — Assistant  
in Philosophy, 1898-99. — Student of Philo-  
sophy, in Berlin.

## Morgan Fellowships (discontinued).

## CHARLES NELSON HASKINS.

S.B. (*Mass. Inst. of Technology*) 1897, S.M.  
1899, A.M. 1900, PH.D. (Mathematics) 1901.  
— Res. Gr. Stud., 1898-1901. — Shattuck  
Scholar, 1898-1900. — Student of Mathe-  
matics, at this University.  
Continuing his studies at Göttingen, as Harris  
Fellow.

## FRANCIS SAMUEL PHILBRICK.

S.B. (*Univ. of Nebraska*) 1897, A.M. (*ibid.*)  
1899. — Res. Gr. Stud., 1899-1901. — Uni-  
versity Scholar, 1899-1900. — Student of  
History, at this University.  
Now continuing his studies at this Univer-  
sity, as Edward Austin Fellow.

## JOHN CHRISTIAN RANSMEIER.

PH.B. (*Northwestern Univ., Ill.*) 1894, A.M.  
1896, PH.D. (Germanic Philology) 1901. —  
Res. Gr. Stud., 1897-1901. — Thayer Scholar,  
1898-99; Shattuck Scholar, 1899-1900. —  
Assistant in German, 1899-1900. — Student  
of German, at this University.  
Instructor in German, Williams College.

## WILLIAM ALBERT WILLARD.

PH.B. (*Iowa Coll.*) 1895, A.M. (*Tufts Coll.*)  
1898, A.M. 1899. — Res. Gr. Stud., 1898-  
1901. — Leverett Saltonstall Scholar, 1898-  
99. — Assistant in Zoölogy, 1899-1900. —  
Student of Zoölogy, at this University.  
Acting Professor of Biology, Iowa College,  
Grinnell, Ia.

1901-02.

## GEORGE HUBBARD BLAKESLEE.

A.B. (*Wesleyan Univ., Conn.*) 1898, A.M.  
(*ibid.*) 1897, A.M. 1900. — Res. Gr. Stud.,  
1898-1901. — Townsend Scholar, 1899-1900.  
Student of History, at Berlin.

## GEORGE WILLIAM HEIMROD.

A.B. 1898, A.M. 1899, PH.D. (Chemistry) 1901.  
— Res. Gr. Stud., 1898-1901. — Thayer  
Scholar, 1899-1900. — Assistant in Chem-  
istry, 1898-99; Austin Teaching Fellow in  
Chemistry, 1900-01.  
Student of Chemistry, in Europe.

## CHARLES WILLIAM PRENTISS.

A.B. (*Middlebury Coll., Vt.*) 1894, A.M. (*ibid.*)  
1897, A.M. 1898, PH.D. (Biology) 1900. —  
Res. Gr. Stud., 1897-1900. — Townsend  
Scholar, 1897-98. — Assistant in Zoölogy,  
1898-1900; Instructor in Anatomy, Har-  
vard Veterinary School, 1900-01.  
Student of Zoölogy, in Europe.

## ROBERT HUNTINGTON FLETCHER.

A.B. (*Dartmouth Coll., N.H.*) 1896, A.M. 1898,  
PH.D. (English Philology) 1901. — Res.  
Gr. Stud., 1897-98 and 1899-1901. — Town-  
send Scholar, 1898-1900; Christopher M.  
Weld Scholar, 1900-01.  
Student of English Philology, in Europe.

## KNIGHT DUNLAP.

PH.B. (*Univ. of California*) 1899, LL.M.  
(*ibid.*) 1900. — Res. Gr. Stud., 1900-01.  
Student of Philosophy, at this University.

1900-01.

1901-02.

## John Tyndall Scholarship.

GEORGE WASHINGTON PIERCE.

*Reappointed.*

S.B. (*Univ. of Texas*) 1898, A.M. (*ibid.*) 1894, A.M. 1899, PH.D. (Physics) 1900. — Res. Gr. Stud., Feb., 1898-1900; Non-Res. Stud., 1900-01. — Student of Physics, at Leipsic. Assistant in Physics, at this University.

EDWIN PLIMPTON ADAMS.

(See Whiting Fellowships, 1900-01.)

## Robert Treat Paine Fellowship.

FREDERICK ALEXANDER BUSHÉE.

*Reappointed.*

LITT.B. (*Dartmouth Coll., N.H.*) 1894, A.M. 1898. — Res. Gr. Stud., 1897-1900. — Non-Res. Stud., 1900-01. — University Scholar, 1897-98; Townsend Scholar, 1898-99. — Student of Economics, in Paris. Assistant in Economics, at this University.

ANDREW LIGHT HORST.

A.B. 1900, A.M. (*Columbia Univ., N.Y.*) 1901. Student of Social Science, at this University.

## Henry Lee Memorial Fellowship.

ROBERT MORRIS.

A.B. (*Univ. of Nashville, Tenn.*) 1897, A.B. (*West Virginia Univ.*) 1899, LL.B. (*ibid.*) 1899, A.M. (*ibid.*) 1900. — Res. Gr. Stud., 1900-01. — Student of Economics, at this University.

Now continuing his studies at this University, as Henry Lee Memorial Fellow.

ROBERT MORRIS.

*Reappointed.*

## Ozias Goodwin Memorial Fellowship.

*No appointment.*

JAMES AUGUSTUS GEORGE.

A.B. (*Univ. of New Brunswick*) 1898, A.B. 1899, A.M. 1901. — Res. Gr. Stud., 1899-1901. — University Scholar, 1900-01. — Assistant in Government, 1899-1900. Student of History and Government, at this University.

## Henry Bromfield Rogers Memorial Fellowship.

GEORGE JOHN BLEWETT.

A.B. (*Univ. of Toronto, Ont.*) 1897, PH.D. (Philosophy) 1900. — Res. Gr. Stud., 1899-1900; Non-Res. Stud., 1900-01. — Toppan Scholar, 1899-1900. — Student of Ethics in its Relations to Jurisprudence, at Oxford. Professor of Philosophy, Wesley College, Winnipeg, Manitoba.

WILLIAM ERNEST HOCKING.

A.B. 1901. Student of Philosophy, at this University.

## Hemenway Fellowship.

WILLIAM CURTIS FARABEE.

A.B. (*Waynesburg Coll., Pa.*) 1894, A.M. (*ibid.*) 1898, A.M. 1900. — Res. Gr. Stud., 1899-1901. — Student of American Archaeology and Ethnology, at this University. Austin Teaching Fellow in Anthropology and Third-year Graduate Student, in this University.

HENRY MINOR HUXLEY.

A.B. 1899. Student of Anthropology, at this University.



1900-01.

1901-02.

## John Harvard Fellowships.

## HARRY NELSON GAY.

A.B. (*Amherst Coll.*) 1891, A.M. 1896. — Res. Gr. Stud., 1894-95 and 1896-97; Non-Res. Stud., 1895-96 and 1900-01. — Student of History, in Rome.  
Continuing his studies in Italy, as John Harvard Fellow.

## HARRY NELSON GAY.

*Reappointed.*

## ROGER BIGELOW MERRIMAN.

A.B. 1896, A.M. 1897, LITT.B. (*Univ. of Oxford, England*) 1899. — Res. Gr. Stud., 1896-97 and 1899-1900; Non-Res. Stud., 1900-01. — Assistant in History, 1899-1900. — Student of History, in Europe.  
Continuing his studies in Europe, as John Harvard Fellow.

## ROGER BIGELOW MERRIMAN.

*Reappointed.*

## Whiting Fellowships.

## EDWIN PLIMPTON ADAMS.

*Reappointed.*  
S.B. (*Beloit Coll., Wis.*) 1899, S.M. 1901. — Res. Gr. Stud., 1899-1901. — Student of Physics and Mathematics, at this University.  
Now continuing his studies in Berlin, as John Tyndall Scholar.

## GUSTAVUS ADOLPHUS ANDEREGG.

S.B. (*Oberlin Coll., O.*) 1899, A.B. 1900. — Res. Gr. Stud., 1900-01. — Assistant in Physics, 1900-01.  
Student of Physics, at this University.

## JOHN EMERSON BURBANK.

*Resigned.*

*One vacancy.*

## CHARLES MONRO PASEA.

S.B. (*Dalhousie Univ., N.S.*) 1900, A.B. 1901.  
Student of Physics, at this University.

## JOSEPH CLEAVELAND PEARSON.

A.B. (*Bowdoin Coll., Me.*) 1900.  
Student of Physics, at this University.

## South End House Fellowship (special for 1900-02).

## ROSSELL FOULK PHELPS.

S.B. (*Amherst Coll.*) 1899, A.B. 1900. — Res. Gr. Stud., 1900-01. — Student of Sociology at this University.  
Now continuing his studies at this University, as South End House Fellow.

## ROSSELL FOULK PHELPS.

*Reappointed.*

## Travelling Fellowship in Botany (special for 1900-01).

## CARLETON ESTEY PRESTON.

A.B. 1899, A.M. 1900. — Res. Gr. Stud., 1899-1900; Non-Res. Stud., 1900-01. — Student of Botany, in Arizona.  
Assistant in Botany, Yale Forest School.

## Charles Eliot Norton Fellowship (new).

## OLIVER SAMUEL TONKS.

A.B. 1896, A.M. 1899. — Res. Gr. Stud., 1898-1901. — University Scholar, 1899-1901.  
Student of Classical Archaeology, in Athens.

1900-01.

1901-02.

## Edward Austin Fellowships (new).

## DONALD CAMERON.

A.B. (*Univ. of Texas*) 1896, A.M. (*ibid.*) 1896,  
A.M. 1900. — Res. Gr. Stud., 1899-1901. —  
Townsend Scholar, 1900-01.  
Student of Classical Philology, at this Uni-  
versity.

## JOSEPH HORACE FAULL.

A.B. (*Univ. of Toronto, Ont.*) 1896.  
Student of Botany, at this University.

## PRENTISS CHENEY HOYT.

A.B. (*Middlebury Coll., Vt.*) 1899, A.M. (*ibid.*)  
1892, A.M. 1899. — Res. Gr. Stud., 1898-  
1901. — Shattuck Scholar, 1900-01.  
Student of English, at this University.

## FRANCIS SAMUEL PHILBRICK.

(See Morgan Fellowships, 1900-01.)

Of the twenty-three holders of fellowships in 1900-01 sixteen are now engaged in teaching; all of them in colleges (three being professors) or universities (including five here). The remaining seven of the twenty-three are continuing their studies, four of them abroad, all being holders of travelling fellowships from this University; three are resident students at this University. Seven of the fellowship holders of 1900-01 hold similar appointments for the present year (1901-02).

The holders of fellowships consist of two classes of students: those that have ordinarily received a higher degree (Ph.D. or S.D.) and are continuing studies and researches of a highly specialized nature for a year or two before taking up active professional work, and those whom the stipend of the fellowships enables to carry on studies normally for a higher degree, which they expect to receive either at this University or at some other university, American or foreign. Thus of the twenty-three fellows in 1900-01 seven were already Ph.D.'s when they became fellows; four received the Doctor's degree at the close of the year of their fellowship (two of them at this University, and two in Germany). Of the remaining twelve, three only had no Harvard degree (two A.M.'s and one S.B. and S.M.); one was a Harvard A.B. only, and the remainder, eight, were all Harvard A.M.'s. Several of these men are known to have the Doctor's degree in prospect.

FELLOWSHIPS AND SCHOLARSHIPS: APPLICATIONS AND APPOINTMENTS.

The following Table (XIII) gives the usual statistics relative to the applications and appointments for the three successive years 1899-1900, 1900-01, 1901-02:—

TABLE XIII.—FELLOWSHIPS AND SCHOLARSHIPS (1898-1900).

1. *Applications and Appointments.*

	1899-1900.	1900-01.	1901-02.
Spring applicants for reappointment or promotion . . . . .	48	51	42
Spring applicants for a first appointment. . . . .	280	256	225
Later applicants . . . . .	76 354	47 354	56 328
Appointed to fellowships . . . . .	20	19	21*
Appointed to scholarships . . . . .	58	57	46
Appointed instructors or assistants . . . . .	21 99	27 108	18 80
Deduct for repetitions . . . . .	— 1	— 1	— 0
	98	102	80
Entered or continued in the Graduate School without receiving any of the above-named appointments . . . . .	64	66	68
Entered undergraduate classes of Harvard College . . . . .	11	8	8
Entered other departments of the University	3 78	4 78	4 75
Applicants who were at the University in the year following their applications . . . . .	176	175	155
Applicants not at the University in that year	178	179	168
	354	354	328

\* These figures do not include the two John Harvard fellowships, the Hemenway fellowship, the Charles Eliot Norton fellowship, or the scholarships of the Harvard Clubs of Chicago, St. Louis, and San Francisco. Two Austin Scholarships are vacant. One extra Thayer Scholarship has been assigned, to take the place of the one left vacant in 1900-01.

2. *Classification of Applicants and Appointees.*

	1899-1900.		1900-01.		1901-02.	
	Applicants.	Appointees.	Applicants.	Appointees.	Applicants.	Appointees.
Students of Philology . . . . .	132	25	128	27	112	19
Students of Philosophy, History, or Political Science . . . . .	119	24	123	23	97	21
Students of Mathematics, Physics, or Chemistry	62	17	61	15	67	16
Students of Natural History . . . . .	37	11	38	11	44	11
Students of other branches, or unclassified . .	4	1	4	0	3	0
	354	78	354	76	323	67
Students in the Graduate School . . . . .	111	51	110	49	109	38
Students in Harvard College . . . . .	39	2	43	6	23	6
Students in other Departments of the University	7	1	3	1	4	0
Former students in some Department of the University . . . . .	28	3	38	7	16	4
Persons never previously members of the University . . . . .	169	21	160	18	166	24
	354	78	354	76	323	67
Harvard Bachelors of Arts or Science, not previously graduated elsewhere . . . . .	37	15	31	8	29	10
Harvard Bachelors of Arts or Science, previously graduated elsewhere . . . . .	15	5	24	6	17	6
Graduates of other institutions, not Harvard Bachelors of Arts or Science . . . . .	244	54	237	59	235	49
Undergraduates of Harvard College, not already graduated elsewhere . . . . .	26	2	28	3	19	2
Undergraduates of other institutions and other non-graduates . . . . .	32	2	34	0	23	0
	354	78	354	76	323	67

This Table (XIII) suggests many comments. The most striking thing is the drop in the number of applicants for 1901-02 — as compared with previous years — by about thirty, the falling-off being almost wholly in Harvard Bachelors of Arts. Perhaps this was due, among other causes, to the reduction in the number of University scholarships (from twenty to ten), a reduction that would be generally known to Harvard men. It may be remarked that this falling-off in number of applicants coincides with that in the number of students

in the School in 1901-02. As usual, the applicants in the languages and in the philosophical and historical sciences outnumber those in the other sciences by two to one. Of the applicants in the languages less than one in six was successful; in philosophy, history, and political sciences, more than one in five; in mathematics, physics, and chemistry, and in natural history, about one in four. Of the applicants who had previously been members of the School, about one-third received an appointment (against one-half in the previous year). Of those who had never been in the University, about one in seven was successful. Among applicants who were Harvard Bachelors, over one in three was successful, while of the very large number of those that held no Bachelor's degree from Harvard, one in five received an appointment. It appears from these proportions, which vary only slightly from year to year, that it is a distinct advantage to the applicant to be a holder of a Harvard Bachelor's degree or to have spent a period of time in study at the University. At the same time, the large number of appointments of men who do not hold the first degree from Harvard (forty-nine appointments out of two hundred and thirty-five applicants in 1901) shows that the graduates of other colleges are by no means discriminated against.

In the selection of appointees great care is exercised. The applications, with credentials and other evidences of merit, are first sent to the committees of the departments under which the applicants are to study. These committees severally return their recommendations, each arranging its candidates in the order of preference. The Committee on Fellowships and other Aids for Graduate Students chooses, mainly on the basis of the opinions of departmental committees, the persons finally to be recommended, selecting and distributing these, as equitably as may be, among the departments, and having reference therein to the merit of individual applicants rather than to the number of applicants or students in the several departments. The Committee's recommendations are presented to the Faculty; this body, with carefully digested evidence before it, in print, with regard to all applicants, ordinarily adopts the recommendations and transmits the list to the Corporation, which then makes the actual appointments.

## INSTRUCTORSHIPS AND ASSISTANTSHIPS.

A small proportion of the members of the Graduate School serve the University as instructors and assistants by regular appointment of the Corporation. These men find time both to do a certain amount of advanced work, often of research, and to give instruction or to aid other teachers in their instruction. The amount of their work in the School varies from a half-course to what is technically known as full work (four courses). In 1900-01 six members of the School were appointed to instructorships, eleven to Austin teaching fellowships, and thirty to assistantships. In the current year there are, of the members of the School, seven instructors and thirty assistants under appointment of the Corporation. Besides these assistants, there are fifteen Austin teaching fellows, thirteen of whom are members of the Graduate School. Our Table shows that many of the annual appointments to these positions are made from among applicants for fellowships and scholarships in the Graduate School.

Out of the three hundred and fifty-three members of the School in 1900-01, one hundred and thirty, or nearly thirty-seven per cent., were holders of instructorships, assistantships, fellowships with stipends, or scholarships. Furthermore, other members of the School, as well as some of the foregoing, held proctorships and other like appointments by which their expenses in the School were reduced.

No strictly new scholarships or fellowships were founded in 1900-01. The four Morgan Fellowships were withdrawn, being replaced by four Edward Austin Fellowships which are awarded upon similar conditions. The stipend of the Christopher M. Weld Scholarship was raised from three hundred to four hundred dollars.

In February, 1900, the Association of American Universities held its first annual conference at Chicago, and, after informal discussion of several matters, adopted a constitution, which declares that the Association "is founded for the purpose of considering matters of common interest relating to graduate study . . . but no act of the Association shall be held to control the policy or line of action of any institution belonging to it." The Association consists of fifteen American universities — California, the Catholic University of America, Chicago, Clark, Columbia, Cornell, Harvard, Johns Hopkins, Leland Stanford Jr., Michigan, Pennsylvania, Princeton, Wisconsin, and Yale — each of which is represented by one or more delegates.

The second annual conference was held at Chicago in February, 1901, and Professor Briggs was present and, as the delegate of Harvard University, presided. The topics specially discussed at this conference, which had been announced in advance, were :—

- (1) Migration of Graduate Students.
- (2) Type of Examination for the Doctor's Degree.
- (3) To What Extent should a Candidate for the Doctor's Degree be Required to Show a Knowledge of Subjects not immediately Connected with his Own Subject?
- (4) Fellowships.

The conference also had before it a communication from the Federation of Graduate Clubs, in which among other recommendations was one that three years should be the minimum time of graduate study for the doctorate degree, and another that all universities should adopt a rule for the publication of all theses accepted from candidates for the degree of Doctor of Philosophy.

Full reports of the discussions, with abstracts of the papers with which the discussion of each topic was opened, have been published in a separate pamphlet.

At the request of Professor Briggs, and after consultation with the Administrative Board, I wrote for his use at the conference a letter in which were given very briefly and informally the views of the Board, as I understood them, on the topics proposed for discussion. A few extracts from this letter are perhaps not out of place here.

“ *The Migration of Graduate Students.* — We think this an excellent practice, but we feel it necessary to insist that students who come to us from other graduate departments should bring a satisfactory record from their principal instructors of the work done by them if such work is to count in any way for our higher degrees. We believe that this migration is useful not only to the men themselves, but in its effects, — in developing the spirit of coöperation between different universities.

“ *Type [understood to be ‘Topics’] of Examination for the Doctor's Degree.* — The usage at this University in the different Departments is so various that it is impossible to lay down any details. We believe here that the Doctor should be master of some great field of learning, and that his examination for the Doctor's degree should be almost wholly within that field. We are not in favor of allowing the candidate for the Doctor's degree to offer for the examination subjects that are not closely related to his field of learning. — Within his field there are subjects enough: and the combinations will be different for different men.

“ *To What Extent should a Candidate for the Doctor's Degree be Required to Show a Knowledge of Subjects not immediately Connected with*

*his Own Subject?* — Our views upon this topic have been partly indicated already. As all candidates for the Doctor's degree must have the Harvard A.B. or its equivalent, and as this is based upon a very broad substratum of liberal knowledge, we think it not necessary to require of candidates for the Doctor's degree knowledge of subjects not intimately connected with their own subjects.

“*Fellowships.* — We think that the name ‘fellowship’ should be limited to appointments that carry with them a considerable sum of money, not less than \$400 a year. There is at this University a difference of opinion as to the nature of fellowships. Some people think that fellowships, like scholarships, should be aids only and should not substantially support men at the University. Others, on the other hand, think that fellowships are of the nature of salaries, and that the stipend should be a generous one. It would be preposterous to expect teachers to be satisfied with very low salaries and to require them to eke out their means by outside work. The holder of a fellowship, who gives his time to research and the advancement of learning, to us seems to be in the same category with a college professor. The efficiency of the work of the Fellows is greatly enhanced if they are not vexed by anxieties about their support. Of course such fellowships as I here have in mind are to be given only to a few men — to men of extraordinary promise, men who are sure to receive appointments in good colleges and universities whenever vacancies are likely to occur.”

For many years the proposition that the dissertations of Doctors of Philosophy and Science should be printed and distributed has been discussed by the Administrative Board. A recommendation on this subject from the Board to the Faculty was acted upon in November, 1900, and rejected by a vote of thirty to twenty-five. In its final form this recommendation provided that the regulations now in force should remain in force, but that in addition the following should be adopted : —

1. Each successful candidate for the degree of Doctor of Philosophy or Doctor of Science is required to deposit in the Harvard College Library fifty printed copies of his thesis (with *vita*) within one year after receiving the degree, unless longer time is granted by special vote of the Division in which the degree is obtained.
2. By special vote of the Division concerned the printed copies thus deposited may be a revised form of the thesis, and, in exceptional cases, instead of the whole thesis, an abstract or essential part of it, and illustrations or plates may be omitted. In all such cases the material for publication must be approved by the Division concerned, and if less than the whole is printed, or if a revised copy of the whole thesis is printed, the fact must be stated in the printed copies.

Among the larger universities Harvard University now stands entirely alone in not requiring the publication of the dissertations of Doctors. To be sure, the larger proportion of Harvard



dissertations are now published in some form, either in the official publications of the several departments, by learned societies, in periodicals, or by private venture; but numbers of them never see print. The valuable results of months or even of years of careful investigation, valuable not only as the indications of high scholarship and power in research, but as contributions to learning or science, are practically inaccessible to scholars. The main objection that has been made to the requirement of publication is the pecuniary burden it would lay upon many candidates. A publication fund for the assistance of authors of theses which but for such assistance would hardly be published would serve a very useful purpose. Such a fund once assured, the Faculty could hardly hesitate to enact a regulation which, salutary in itself, is in force at every other important university in America and in Europe.

On an earlier page certain statistics are given about students in the Graduate School who have already pursued graduate studies elsewhere. These statistics are interesting and important from several points of view. It is apparent, especially if we include with these men those who have elsewhere carried on higher studies as undergraduates, that the migration of advanced students from university to university, or at least to this University, is in full tide. These statistics show that advanced or graduate instruction is now provided in a large and constantly increasing number of American colleges; they also show that at the present time many men who have had this instruction wish to supplement it by work done at Harvard. Presumably this most advanced and very highly specialized work is, in the opinion of the migrants, done to better advantage at Harvard than elsewhere; this might safely be affirmed at least of the subjects that are here pursued by the larger number of these migrating students. But these conditions may not long continue. With the rapid and almost unprecedented enlargement and enrichment of the opportunities for graduate instruction in various other parts of the country, the relative preëminence and attractiveness of Harvard may cease. They assuredly will cease, unless the standards of instruction—both in range and quality—and of the requirements for the degrees are maintained at a high level, and unless, among other things, the way is made easy for men of ability and promise to come to the Graduate School and to remain in it, men for the most part of limited means but of limitless ambition.

The formal opening meeting of the School for the current year (1901-02) was held on Thursday evening, October 3, in the

Faculty Room. The chief address was delivered by Professor E. C. Pickering, on recent work in photographic astronomy and on the call made at the present time, by reason of the elaborate organization of scientific research, for men of varied scientific training and equipment. Short addresses were made by Professor Peabody, Dean of the Divinity School, and Mr. P. C. Hoyt, President of the Graduate Club.

JOHN HENRY WRIGHT, *Dean.*

DECEMBER 4, 1901.

## THE DIVINITY SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR, — I have the honor to present the following statement concerning the Divinity School for the year 1900–01. During the whole academic year, with the exception of the first weeks, the School was without a Dean.

The changes in the Faculty of the School during this year were without precedent in number and importance. The profoundly lamented death of Dean Everett not only deprived the School of his administrative leadership, but left vacant throughout the year the Chair of Systematic Theology. The retirement of Professor Thayer from the active service of the School, and the acceptance by Assistant Professor Platner of a Professorship in Andover Theological Seminary, left our Staff greatly reduced and involved much re-arrangement of our courses and departments. Professor Fenn was appointed in March to the Bussey Professorship of Theology, but did not undertake his duties until September, 1901. When we add to these changes in our Faculty the radical modifications which have already occurred: first, the raising of the tuition fee of the School to the level of that in other Cambridge Departments of the University; second, as a result of a demand in which the Divinity School has taken the lead, the requirement of the degree of Bachelor of Arts as essential for candidacy for the professional degree; and third, the opening of non-professional courses in the University, approved by the Faculty, as appropriate for the degree of Bachelor of Divinity; we must recognize that a transformation of method has been made in the Divinity School, which is quite unparalleled in its history, and perhaps in the history of theological education.

The effect of these successive changes is indicated by the following figures, which cover twenty-five years. The requirement of the degree of Bachelor of Arts was first made in the year 1886–87; and the number of students soon dropped from 25 to 16. Recovery of numbers followed, accompanied by improvement of quality, until the enrolment rose to 50 in the year 1894–95. In 1897–98, the increase of fee at once reduced the attendance; and in two years an average, for a term of seven years, of 42 was reduced to 26. It now appears probable that the full effect of these successive changes has been felt, and the year 1901–02 begins with another considerable increase of numbers.

Academic Year.	Number of Students.	Academic Year.	Number of Students.
1876-77 . . . . .	28	1889-90 . . . . .	35
1877-78 . . . . .	21	1890-91 . . . . .	41
1878-79 . . . . .	23	1891-92 . . . . .	39
1879-80 . . . . .	23	1892-93 . . . . .	41
1880-81 . . . . .	23	1893-94 . . . . .	47
1881-82 . . . . .	29	1894-95 . . . . .	50
1882-83 . . . . .	27	1895-96 . . . . .	41
1883-84 . . . . .	21	1896-97 . . . . .	37
1884-85 . . . . .	26	1897-98 . . . . .	40
1885-86 . . . . .	25	1898-99 . . . . .	26
1886-87 . . . . .	20	1899-1900 . . . . .	28
1887-88 . . . . .	16	1900-01 . . . . .	28
1888-89 . . . . .	26		

The twenty-eight students enrolled in the year 1900-01 were distributed as follows:—

Resident Graduates . . . . .	9
Senior Class . . . . .	2
Middle Class . . . . .	5
Junior Class . . . . .	8
Special Students . . . . .	4

Eighteen colleges were represented as follows:—

Antioch College . . . . .	1	McGill University . . . . .	2
Bates College . . . . .	1	Miami University . . . . .	1
Bowdoin College . . . . .	1	University of Missouri . . . . .	1
Brown University . . . . .	2	University of Nebraska . . . . .	1
Chinzei Gakkwan . . . . .	1	Ohio State University . . . . .	1
Colby University . . . . .	1	Tufts College . . . . .	1
Dalhousie College . . . . .	1	Union College . . . . .	1
Franklin College . . . . .	1		28
Giessen University . . . . .	1	Counted more than once . . . . .	4
Harvard University . . . . .	9		24
University of Iowa . . . . .	1		

Eight theological seminaries were represented as follows:—

Cobb Divinity School . . . . .	1	Presbyterian College, Montreal	1
Halifax Theological College . . . . .	1	Union Theological Seminary . . . . .	1
Harvard University . . . . .	1		10
Meadville Theological School . . . . .	3	Counted more than once . . . . .	1
New Church Theol. Sch., Cam. . . . .	1		9
Oberlin College . . . . .	1		

The degree of S.T.B. was taken by two members of the School, that of A.M. by five.

The address at the opening of the year was by Professor Emerton. His subject was Present Aspects of Historical Theology.

A Summer School was held, as in the two preceding years, from July 2 to July 19. The three sessions of the School gave the following record of attendance:—

	Men.	Women.	Total.
1899 . . . . .	96	9	105
1900 . . . . .	52	2	54
1901 . . . . .	84	5	89

The distribution by denominations, in the case of ministers attending in the three years, was as follows:—

	Orthodox Congregational.	Unitarian Congregational.	Episcopalian.	Universalist.	Baptist.	Presbyterian.	Disciples.	Methodist.	Free Baptist.	Lutheran.
1899	27	17	16	14	5	3	—	—	—	—
1900	17	6	3	14	6	—	3	3	—	—
1901	28	12	11	14	5	2	—	10	1	1

In 1899 the Committee of the Board of Overseers to visit the Divinity School, in the course of their Report, remarked: “Students, for some years to come, are likely to be few, though they are likely also to be of good quality. The best that can be looked for is that a certain number of mature students will seek the broader training after their course in another school is ended.” The resort to the School then anticipated seems now likely to occur. The number of Graduate Students makes each year a considerable proportion of the whole enrolment, and will probably increase as the School associates itself more closely with the larger movements of University life.

The following table gives the number of graduates of other theological schools registered in the Harvard Divinity School for each of the last three years, and the percentage of the total registration which that number constituted:—

1898-1899 . . . . .	10 . . . . .	38.5
1899-1900 . . . . .	11 . . . . .	39.3
1900-1901 . . . . .	9 . . . . .	32.1

The following is a list of the courses of the School, and after each course given last year is a statement of the number of students taking it from the Divinity School, from the Graduate School, and from the College. It will be observed that the Faculty of the Divinity

School contribute largely to the instruction offered both in the College and in the Graduate School. On the other hand, nine elections of College courses were made by Divinity students. There is appended to the list of regular courses a list of the lectures of the Summer School. Almost all of the students enrolled in the Summer School attended all its courses.

## COURSES OF INSTRUCTION.

### OLD TESTAMENT.

1. Professor LYON. — Hebrew. — Davidson's Introductory Hebrew Grammar. Explanation of parts of Genesis and of the Psalm-book.  
2 Div., 1 Gr., 4 Col.
2. Professor TOY. — Hebrew (second course). — Syntax. — Interpretation of parts of the Prophets and Poetical Books. Text-criticism. 1 Div., 4 Col.
- 3<sup>1</sup> *hf.* Professor LYON. — Jewish Aramaic. Kautzsch's *Biblisch-Aramäische Grammatik*. — Interpretation of parts of Ezra, Daniel, and the Targums. *Half-course.*
4. Professor LYON. — History of Israel, political and social, till the capture of Jerusalem by the Romans. Text-books, lectures, and theses.  
4 Div., 52 Col., 6 Sci.
5. Professor TOY. — History of pre-Christian Hebrew Literature.  
5 Div., 1 Col.
6. Professor TOY. — History of the Hebrew Religion, with comparison of other Semitic religions.  
2 Div., 2 Gr.
7. Professor LYON. — Assyrian. Lyon's Assyrian Manual. Delitzsch's Assyrian Grammar. Abel and Winckler's *Kellschrifttexte*.
8. Professor LYON. — Assyrian (second course). — Delitzsch's Assyrian Grammar. Delitzsch's *Assyrische Lesestücke*. The Chaldean Epic. Letters and Commercial Documents.  
1 Div.
20. Research courses. The instructors arrange and supervise for any properly prepared student a line of special study on such topic as may be agreed on.  
1 Div.

### NEW TESTAMENT.

- 1<sup>1</sup> *hf.* Professor THAYER. — New Testament Times. — The political, social, moral, and religious condition of the world when Christ appeared. *Half-course.*  
6 Div.
- 2<sup>2</sup> *hf.* Professor THAYER. — New Testament Introduction. — The origin, contents, and history of the New Testament writings, together with the formation of the Canon. *Half-course.*  
6 Div.
- 3<sup>1</sup> *hf.* Asst. Professor ROPES. — Preparatory Course. — General topics (including the characteristics of New Testament Greek and the elements of textual criticism); exegetical work begun. *Half-course.*  
4 Div.

- 4<sup>h</sup> *hf.* Asst. Professor ROPES. — The Teaching of Jesus as contained in the Synoptic Gospels. *Half-course.* 5 Div.
- 5<sup>h</sup> *hf.* Asst. Professor ROPES. — The Synoptic Gospels, with special reference to the Synoptic Problem. *Half-course.*
6. Professor THAYER. — The Gospel and Epistles of John.
7. Asst. Professor ROPES. — The Apostolic Age. — Study of the Acts of the Apostles. 8 Div.
8. Professor THAYER. — Outline lectures on the life of Paul. — Study of the Four Great Epistles.
9. Asst. Professor ROPES. — The Minor Pauline Epistles. 1 Div.
- 10 *hf.* Asst. Professor ROPES. — The Pastoral Epistles. *Half-course.*
11. Professor THAYER. — The Epistle to the Hebrews.
- 12 *hf.* Asst. Professor ROPES. — The Catholic Epistles. *Half-course.*
13. Asst. Professor ROPES. — The Apocalyptic literature, with special study of the Revelation of John.
14. Professor THAYER. — Biblical Interpretation. — Its history, methods, principles, and their application in the study of difficult and debated New Testament passages. 1 Div.
15. Professor THAYER. — Biblical Theology of the New Testament, centring upon the doctrines of sin and redemption.
- 16 *hf.* Professor THAYER. — History of the English Bible, with a detailed study of the Revised New Testament. *Half-course.*
- 17 *hf.* Professor THAYER. — Modern Lives of Christ. *Half-course.*
- 18 *hf.* Professor THAYER. — Biblical Geography and Archaeology. *Half-course.*
- 19 *hf.* Professor THAYER. — Selections from the Septuagint, with special reference to the use made of the Old Testament in the New. *Half-course.*
- 21 *hf.* Professor THAYER. — Selections from Greek and Latin writers of special interest to students of the New Testament. *Half-course.*
- 22<sup>h</sup> *hf.* Professor LYON. — Classical Aramaic (Syriac). Roediger's *Chrestomathia Syriaca* (ed. 3). The Peshitto version of the New Testament. *Half-course.*
20. Professor THAYER. — Advanced study and research on such topics as the antecedents and aims of individual students may render advisable.

## CHURCH HISTORY.

1. Asst. Professor PLATNER. — The Church of the first six centuries. 6 Div., 3 Gr., 2 Col.
2. Professor EMERTON. — The Mediaeval Church. — Formation of national churches in the Germanic states; establishment of the mediaeval papacy and its development to be the controlling force in European affairs; the Holy Roman Empire.
3. Professor EMERTON. — The Era of the Reformation in Europe from the rise of Italian Humanism to the close of the Council of Trent, 1350–1563. 2 Div., 10 Gr., 9 Col.

4. Asst. Professor PLATNER. — History of the Church since the Reformation. 1 Div., 1 Gr., 4 Col.
5. Professor EMERTON. — History of Christian Thought, considered in its relation to the prevailing philosophy of each period from the earliest time to the eighteenth century. 4 Div., 5 Col.
- 9 *hf.* Asst. Professor PLATNER. — Symbolics. *Half-course.* 8 Div.
- 20a. Professor EMERTON. — Advanced study and research. 1 Gr.
- 20b. Asst. Professor PLATNER. — Seminary in the History of Early Christian Literature. 1 Div.

## COMPARATIVE STUDY OF RELIGIONS.

1. Comparative Study of Religions, particularly the Vedic Religion, the Hindu Philosophies, Buddhism, Mazdaism, and the Chinese Religions.

## THEOLOGY.

- 2 *hf.* The Psychological Elements of Religious Faith. *Half-course.*
3. Systematic Theology. Theism and the special content of Christian Faith.
20. Theological Seminary.

## SOCIAL QUESTIONS.

1. Professor PEABODY. — The Ethics of the Social Questions. — The modern social questions: Charity, the Family, Temperance, and various phases of the Labor question in the light of ethical theory. — Lectures, special researches, and required reading. 6 Div., 4 Gr., 99 Col., 8 Sci.
20. Professor PEABODY. — Sociological Seminary. Subject for the year: Christianity and the Social Question. 10 Div., 1 Col., 1 Law.

## HOMILETICS AND PASTORAL CARE.

- 1 *hf.* Asst. Professor HALE. — The structure and analysis of sermons. *Half-course.* 8 Div.
2. Professor PEABODY and Asst. Professor HALE. — Each student writes eight sermons during the year, of which some are preached before the class and criticised by students and instructor; some are preached before the instructor and a member of the class and criticised by them; and the rest are criticised by the instructor privately. This course may be taken twice. 7 Div.
- 3 *hf.* Professor PEABODY. — The Minister as Pastor, and the history of Christian worship. *Half-course.* 5 Div.
- 4 *hf.* Professor PEABODY. — The Minister as Preacher, and the history of Christian preaching. *Half-course.*
- 5 *hf.* Asst. Professor HALE. — The Minister as Organizer and Director of Church Activities. *Half-course.* 6 Div.

## ELOCUTION.

- 1 *hf.* Dr. CURRY. — Vocal training. *Half-course.* 7 Div.
- 2 *hf.* Dr. CURRY. — Vocal expression. *Half-course.*



## SUMMER SCHOOL OF THEOLOGY.

- Professor PRABODY.** — Two lectures: Ethical Theories and Social Movements.
- Professor TAUSSIG.** — Two lectures: The Nature of Industrial Monopolies. Public Ownership.
- Hon. CARROLL D. WRIGHT.** — Two lectures: Has the Condition of the Masses Improved during the Last Half-century? Is there any Solution of the Labor Problem?
- Mr. J. G. BROOKS.** — Two lectures: The Ethical Side of Labor Problems. The Consumers' League.
- Professor CARVER.** — Four lectures: The Nature of an Economic Law. The Relation of the Institution of Private Property to Economic Progress. The Relation of Competition to Economic Progress. An Effective Programme for Raising Wages.
- Professor CLARK.** — Three lectures: Competition and Moral Law. (1) A Natural Economic System. (2) The Struggles of Classes. (3) The Society of the Future.
- Professor SHALER.** — One lecture: Association and the Individual.
- Professor PALMER.** — Three lectures: Agencies of Redemption. (1) Restraint. (2) Enlargement. (3) Consecration.
- Professor EMERTON.** — Two lectures: Christianity and Asceticism.
- Professor FENN.** — Three lectures: The Kingdom of God. (1) The Idea of Jesus. (2) The Present Significance of the Idea. (3) Its Place in Theology.
- Professor MATHEWS.** — Two lectures: The Social Interpretation of Christianity in the Apostolic Age.
- Professor KING.** — Three lectures: The Influence of the Social Consciousness upon Theology. (1) The Real Teaching of the Social Consciousness as the Theologian must View It. (2) The Influence of the Social Consciousness upon the Conception of the Religious Life. (3) The Influence of the Social Consciousness upon Theological Doctrine.
- Professor BOWNE.** — One lecture: The Moralization of Life and the Vitalization of Morals.
- President ELIOT.** — One lecture: The Voluntary Church and its Ministry in a Democracy.
- Dean HODGES.** — Two lectures: The Christian Social Movement. The Christian Social Parish.
- Dr. BRADFORD.** — One lecture: The Social Problem of the Suburban Church.
- President HYDE.** — One lecture: The Social Problem of the Country Minister.
- Mr. WOODS.** — Two lectures: The Social Problem of the Minister in the City. The Special Field of the Social Settlement.

Principal WASHINGTON. — One lecture: The Religious Aspect of the Negro Question.

Mr. PAINE. — One lecture: The Organization of Charity in Small Towns.

Professor GILMAN. — Two lectures: The Attitude of the Clergyman toward Social Problems.

Professor MÜNSTERBERG. — One lecture: Psychology and Social Activity.

During the year from October 1, 1900, to September 30, 1901, there were added to the Divinity Library 483 volumes and 69 pamphlets by purchase, and 156 volumes and 118 pamphlets by gift. October 1, 1901, there were in the Library 30,624 volumes and 7,011 pamphlets. During the year there were 938 titles catalogued in the author catalogue and 130 titles in the subject catalogue. There were borrowed from the stack for home use 940 volumes; from the stack for hall use, 443 volumes; from the reserved books for over-night use, 783 volumes.

Much of the time of the Librarian was devoted to the preparation of a new edition of the General Catalogue of the School, which was published in the summer.

FRANCIS G. PEABODY, *Dean*.

## THE LAW SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY: —

SIR, — I have the honor of presenting my report upon the Law School for the academic year 1900—01.

The table on pages 158, 159 gives the courses of study and instruction during the year, the text-books used, the number of exercises per week in each course, and the number of students

Year.	Whole No. of Students.	Total of College Graduates.	Harvard Graduates.	Graduates of other Colleges.	Non-Graduates.	Percent. of College Graduates.	No. of Colleges represented.
1870-71	165	77	27	50	88	47	27
1871-72	138	70	34	36	68	51	25
1872-73	117	66	34	32	51	56	25
1873-74	141	86	49	37	55	61	25
1874-75	144	82	68	19	62	57	18
1875-76	173	93	60	33	80	54	25
1876-77	199	116	74	42	83	58	30
1877-78	196	121	80	41	75	62	30
1878-79	169	109	71	38	60	64	24
1879-80	177	118	90	28	59	66	20
1880-81	161	112	82	30	49	70	19
1881-82	161	99	66	33	62	61	22
1882-83	138	93	58	35	45	67	32
1883-84	150	105	75	30	45	70	25
1884-85	156	122	85	37	34	78	31
1885-86	158	122	83	39	36	77	29
1886-87	188	143	88	55	45	76	34
1887-88	225	158	102	56	67	70	32
1888-89	225	158	105	53	67	70	32
1889-90	262	189	122	67	73	72	41
1890-91	285	200	135	65	85	70	33
1891-92	370	257	140	117	113	69	48
1892-93	405	266	132	134	139	66	54
1893-94	367	279	129	150	88	76	56
1894-95	418	310	139	171	103	75	74
1895-96	475	330	171	209	95	80	82
1896-97	490	408	186	222	82	83	82
1897-98	551	490	229	261	61	89	77
1898-99	564	503	212	291	61	89	78
1899-00	613	557	236	321	56	91	67
1900-01	655	605	252	353	50	92	88
1901-02	631	582	247	335	49	92	92

Instructors.	Studies and Text-books.	Exercises per week.	Number of students examined.
Prof. Williston. Mr. Dodge Prof. Gray } Asst. Prof. Westengard }	<b>First Year.</b> Contracts. Cases on Contracts: Langdell, vol. 1 (3d ed.), Williston, vol. 2 . . . Property. Gray's Cases on Property, vols. 1, 2 . . . . .	3	256
Prof. Smith . . . . . Prof. Beale. Mr. Peabody . . . . . Asst. Prof. Westengard . . . . .	Torts. Cases on Torts: Ames, vol. 1 (2d ed.), Smith, vol. 2 . . . . . Criminal Law and Procedure. Beale's Cases on Criminal Law . . . . . Civil Procedure at Common Law. Ames's Cases on Pleading . . . . .	2 2 1	259 266 252 264
Prof. Wambaugh . . . . . Prof. Brannan . . . . . Prof. Wambaugh . . . . . Prof. Thayer . . . . . Prof. Wambaugh . . . . . Prof. Ames . . . . .	<b>Second Year.</b> Agency. Wambaugh's Cases on Agency . . . . . Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes . . . Contracts and Quasi-Contracts. Keener's Cases on Quasi-Contracts . . . . . Evidence. Thayer's Cases on Evidence (2d ed.) . . . . . Insurance, Marine, Fire, and Life. Wambaugh's Cases on Insurance . . . . . Jurisdiction and Procedure in Equity. Keener's Cases on Equity Jurisdiction, Vol. 1 . . . . .	2 2 2 2 2 2	126 75 9 176 22
Prof. Smith . . . . . Prof. Gray . . . . . Asst. Prof. Westengard }	Law of Persons. Smith's Cases on Persons . . . . . Property. Gray's Cases on Property, vols. 3, 4 . . . . .	1 2	5 186
Prof. Williston . . . . . Prof. Ames . . . . . Prof. Ames . . . . . Prof. Williston . . . . . Prof. Beale . . . . . Prof. Brannan . . . . .	Sales of Personal Property. Williston's Cases on Sales . . . . . Trusts. Ames's Cases on Trusts (2d ed.) . . . . . Admiralty. Ames's Cases on Admiralty . . . . . Bankruptcy. No text-book . . . . . Carriers. McClain's Cases on Carriers and Beale's Cases on Carriers . . . . . Damages. Beale's Cases on Damages . . . . .	2 2 1 1 1 1	181 180 6 4 21 4

		<b>Third Year.</b>		
Prof. Thayer . . . . .	Constitutional Law. Thayer's Cases on Constitutional Law . . . . .	3		99
Prof. Beale . . . . .	Conflict of Laws. Beale's Cases on the Conflict of Laws . . . . .	2		48
Prof. Smith . . . . .	Corporations. Smith's Cases on Private Corporations. Smith's Cases on Municipal Corporations . . . . .	2		158
Prof. Strobel . . . . .	International Law as administered by the Courts. . . . .	2		
Prof. Ames . . . . .	Jurisdiction and Procedure in Equity. Keener's Cases on Equity Jurisdiction, vol. 1 . . . . .	2		198
Prof. Brannan . . . . .	Partnership. Ames's Cases on Partnership . . . . .	2		23
Prof. Gray . . . . .	Property. Gray's Cases on Property, vols. 5, 6 . . . . .	2		52
Prof. Ames . . . . .	Suretyship and Mortgage. Ames's Cases on Suretyship . . . . .	2		66
Prof. Wambaugh . . . . .	Agency. Wambaugh's Cases on Agency . . . . .	2		24
Prof. Brannan . . . . .	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes . . . . .	2		50
Prof. Wambaugh . . . . .	Contracts and Quasi-Contracts. Keener's Cases on Quasi-Contracts . . . . .	2		18
Prof. Thayer . . . . .	Evidence. Thayer's Cases on Evidence . . . . .	2		17
Prof. Wambaugh . . . . .	Insurance, Marine, Fire, and Life. Wambaugh's Cases on Insurance. . . . .	2		44
Prof. Smith . . . . .	Law of Persons. Smith's Cases on Persons . . . . .	1		21
Prof. Gray . . . . .	Property II. Gray's Cases on Property, vols. 3, 4 . . . . .	2		14
Asst. Prof. Westengard } . . . . .	Sales of Personal Property. Williston's Cases on Sales. . . . .	2		40
Prof. Williston . . . . .	Trusts. Ames's Cases on Trusts (2d ed.) . . . . .	2		17
Prof. Ames . . . . .	Admiralty. Ames's Cases on Admiralty . . . . .	1		17
Prof. Williston . . . . .	Bankruptcy. No text-book . . . . .	1		41
Prof. Beale . . . . .	Carriers. McClain's Cases on Carriers and Beale's Cases on Carriers . . . . .	1		53
Prof. Brannan . . . . .	Damages. Beale's Cases on Damages . . . . .	1		18

who offered themselves for examination in each course at the end of the year.

During the twelve months from October 1, 1900, to October, 1901, 5,902 bound volumes and 324 pamphlets were added to the library. The library contained, October 1, 1901, about 62,500 volumes and 6,400 pamphlets.

The table on page 157 exhibits the growth of the School during the last thirty-one years, in the number of students, the number and percentage of college graduates, and in the number of colleges represented by their graduates. The figures for the current year will be slightly increased by later entries.

The number of non-graduates, 49, is somewhat misleading. Thirty-six of these are Harvard College Seniors, on leave of absence and registered in the Law School, of whom 34 have completed the work required for the degree of A.B., and 2 lack only a half-course. If these 36 Seniors be transferred to the College Graduate column, we have 618 graduates, and the percentage of college graduates rises from 92 to 98.

JAMES BARR AMES, *Dean.*

## THE FACULTY OF MEDICINE.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR, — As Dean of the Faculty of Medicine I have the honor to submit the following report for the academic year 1900–01.

In accordance with the recommendation of the Administrative Board of the Dental School, the Faculty voted that certificates of attendance be hereafter given to graduates of reputable Dental Schools who attend the courses in Operative or Mechanical Dentistry.

The Summer Courses in the Medical School were restricted to graduate and undergraduate students of Medical Schools recognized by the Faculty, and to such other persons as the Dean of the Faculty approved. Heretofore these courses have been open to all applicants, and it was felt that in some cases the privilege had been improperly used.

On recommendation of the Committee on the Course of Study, it was voted that the optional course in animal parasites, given by Professor T. Smith, be hereafter a part of the required work in Pathology.

A few changes have been made in the method of teaching in several of the departments, thereby increasing the amount of sectional instruction, especially in the third and fourth years. A practical examination has been held in some of the departments in addition to the written examination heretofore required. In some cases the time allowed for the written examination has been shortened.

At the close of the academic year, 152 men were recommended to the Corporation for degrees, as follows:—

Medical School . .	{	For the degree of M.D. . . . . .	87
		“ “ “ <i>cum laude</i> . . . . .	29
Dental School . .	{	For the degree of D.M.D. . . . . .	24
		“ “ “ <i>cum laude</i> . . . . .	5
Veterinary School .	{	For the degree of M.D.V. . . . . .	6
		“ “ “ <i>cum laude</i> . . . . .	1
Total . . . . .			152

During the year the Committee on New Buildings, of which Dr. J. C. Warren was Chairman, held a number of meetings, and finally submitted a series of preliminary sketches which were carefully considered at a special meeting of the Faculty.

On Commencement day the President of the University announced the gift, from Mr. J. Pierpont Morgan, of New York, of the funds for the erection of three of the proposed new buildings for the Medical School.

Early in July the Corporation instructed the President to appoint a committee of the Medical Faculty as an Advisory Committee on these new buildings. The following Committee was appointed: Drs. W. L. Richardson (Chairman), H. P. Bowditch, J. C. Warren, E. S. Wood, W. F. Whitney, C. S. Minot, and F. Dexter.

This Committee subsequently elected Dr. Farrar Cobb as its Secretary, and appointed the three following sub-committees:—

On the Administrative Building: Drs. W. L. Richardson, J. C. Warren, and W. F. Whitney.

On the Anatomical and Histological Building: Drs. C. S. Minot and F. Dexter.

On the Physiological and Physiological Chemical Building: Drs. H. P. Bowditch and E. S. Wood.

These several sub-committees at once began the work of preparing plans, under the direction of the Building Committee of the Corporation, Drs. Walcott and Cabot, and with the assistance of the architects, Messrs. Shepley, Rutan and Coolidge.

At a subsequent date Dr. J. C. Warren was made Chairman of the Advisory Committee on the New Buildings, in place of Dr. W. L. Richardson, thus giving the Committee the same Chairman as the original Building Committee.

The Veterinary School was closed at the end of the year, two of the students being transferred to the Medical School, and instruction being provided for the others in the Veterinary Department of the University of Pennsylvania.

WILLIAM L. RICHARDSON, *Dean.*



## THE MEDICAL SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—As Dean of the Medical School, I have the honor to submit the following report for the academic year 1900–01.

The Administrative Board for the Medical School was constituted as follows: Drs. W. L. Richardson, J. C. Warren, E. S. Wood, F. C. Shattuck, W. F. Whitney, C. M. Green, C. Harrington, F. Dexter, and F. B. Mallory. Dr. C. M. Green was subsequently chosen Secretary of the Board.

The increased number of new matriculants (196) was accounted for by the fact that it was the last opportunity for a student to enter the School by passing admission examinations. Many entered too young and with a training insufficient to enable them to profit by the instruction offered. Several dropped out early in the course, and the mid-year and final examinations showed how poorly fitted many others were to undertake the required work. Only one hundred passed the examinations successfully, seventy-five being conditioned in one or more of the four examinations, and fifteen failing to pass any of them.

In my last report I was able to state how satisfactorily the new plan of instruction had worked in the first year. The same class has now finished the second year, during the first term of which the new plan was tried with marked success in all courses, according to the professors in charge, with the exception of Anatomy, to which allusion is made later in this report.

*Building.*—The most important change made since the last report has been the connection of all the Chemical Laboratory hoods with the fan which ventilates the Dissecting Room. The various pipes connecting the Dissecting Room and the Laboratory hoods are now all provided with valves, so that the fan can take the air from any or all of the connecting pipes.

*Physiology.*—The following papers containing the results of investigations by the laboratory staff and special students have been published:—

Some ways of causing mitotic division in unfertilized *Arbacia* eggs. By ALBERT P. MATHEWS. *The American Journal of Physiology*, Vol. IV, pp. 343–347.

On the methods of estimating the force of voluntary muscular contractions and fatigue. By SHEPHERD IVORY FRANZ. *The American Journal of Physiology*, Vol. IV, pp. 348-372.

The spontaneous secretion of saliva and the action of atropine. By ALBERT P. MATHEWS. *The American Journal of Physiology*, Vol. IV, pp. 482-499.

The effect of maximum muscular effort on blood-pressure. By J. H. MCCURDY. *The American Journal of Physiology*, Vol. V, pp. 95-103.

The inhibition time of a voluntary muscular contraction. By ALLEN CLEGHORN and COLIN C. STEWART. *The American Journal of Physiology*, Vol. V, 281-286.

The effect of carbon dioxide and oxygen on smooth muscle. By ALLEN CLEGHORN and H. D. LLOYD. Proceedings of the American Physiological Society. *The American Journal of Physiology*, Vol. V, pp. 16, 17. Also in *The Journal of the Boston Society of Medical Sciences*, Vol. V, pp. 367, 368.

Cerebral pressure following trauma. By W. B. CANNON. *The American Journal of Physiology*, Vol. VI, pp. 91-121. An abstract of this paper was read at the Annual Meeting of the Massachusetts Medical Society, June 12, 1901, and was printed in the records of the Society and also in the *Boston Medical and Surgical Journal*, Vol. CXLV, p. 158.

There have also been published : —

An Introduction to Physiology (second edition), pp. 1-314. By W. T. PORTER. The University Press, Cambridge, 1901.

Experiments for students in the Harvard Medical School. Second Series. The nervous system and the skin, pp. 1-28. By W. T. PORTER. The University Press, Cambridge, 1901.

Experiments for students in the Harvard Medical School. Third Series. The eye, pp. 1-193. By W. T. PORTER. The University Press, Cambridge, 1901.

Catalogue of the Harvard Physiological Apparatus, containing forty-six pieces, specially designed for the laboratory teaching of Physiology to large numbers of students, pp. 1-51. The University Press, Cambridge, 1901.

The laboratory teaching of Physiology. First paper. By W. T. PORTER. *Science*, October, 1901.

The use of clinical records in teaching medicine. By W. B. CANNON. *Bulletin of the American Academy of Medicine*, 1901, Vol. V, pp. 203-213.

The investigation by Dr. J. W. Langelaan on muscle tone and tendon reflexes is in press. Some of these experiments were published in the *Archiv für Physiologie*, 1901, p. 106 *et seq.*

Dr. W. B. Cannon has continued his study of the movements of the food in the alimentary canal. Dr. Allen Cleghorn has almost completed his investigation of the effect of castration upon growth and muscular activity. Dr. S. I. Franz has made interesting observations upon the functions of certain portions of the cerebral cortex. Dr. Waldemar Koch has been employed upon the chemistry of nervous tissues. Mr. L. J. Henderson has continued his studies upon the chemistry of blood-pressure. Messrs. William Skarstrom and N. E. Sanders have investigated the immediate effect of exercise upon the blood-pressure and the pulse. Professor W. T. Porter has pursued his investigations on the physiology of the heart. Seven weeks were spent by him in the Zoölogical Station at Naples, in the study of Torpedo, Octopus, Scyllium, and similar forms. Professor Porter has found an explanation of fibrillar contraction of the heart, which has been presented informally in a lecture at the Woods Holl Marine Biological Laboratory, and, through the kindness of Professor Bowditch, at the International Congress of Physiologists in Turin. Much of Professor Porter's time has been spent in a systematic effort to bring the teaching of Physiology by laboratory methods within the reach of every school. For this purpose apparatus of precision has been designed upon lines permitting its manufacture in large quantities at a small cost. Of the forty-six pieces mentioned in the catalogue noted above, more than thirty are partly or wholly new inventions. This apparatus is in use in more than twenty American schools, and is beginning to be used abroad. The saving in outlay for Physiological teaching represented by the apparatus thus installed already exceeds fifty thousand dollars. In this work Professor Porter has profited by the valuable and generous criticism of past and present instructors and mechanics in the department.

*Anatomy.* — The new method of concentrating studies works well up to a certain point. In the first year a great deal is learned in a short time, but the examination at the end of the second year seems to show that two months partially devoted to Anatomy in the second term of the second year, after a complete intermission of one year, are far from sufficient.

The arrangement of the collection illustrating numerical variation in human spines has been completed by Professor Dwight, and, with the kind assistance of Dr. Whitney, has been properly set up and fully labelled in the Museum. It is proposed to add to it from time to time remarkable specimens, but no others.

Professor Dwight is continuing an investigation on a method of determining the sex of bones, which will probably be published

within a year. He is also working at anomalies of the bones of the wrist and ankle.

Dr. Lothrop has been doing good work on the internal structure of the nasal cavity.

Dr. Young has made a series of valuable specimens of transparent foetuses.

*Histology and Embryology.* — The new plan of study, or system of concentration, continues to justify itself by its results. Students are found to learn more and to retain their knowledge better than under the old system.

The work is hampered seriously by want of laboratory accommodations. The lack of suitable work rooms has increased very much the difficulty of securing trained assistants, as they prefer other laboratories where space for comfortable work is available. Until the new laboratories are open, the work of the department must remain severely handicapped.

The Embryological Collection has again grown, complete serial sections of seventy-one typical embryos having been added during the year. It proves of constantly increasing value for very varied investigations. It is very desirable to obtain means to enlarge the collection, which is unique. Five thousand dollars is needed for this purpose. A gift of this amount would be an important contribution to medical science.

The Histological Collection has been improved by the arrangement and cataloguing of preparations already in hand, and also by the new preparations added.

A larger number of investigations have been carried on in the laboratory than ever before. Of those not yet completed, mention may be made of Professor Minot's work on the development of the pineal region of the brain, and on the embryology of the rabbit; of Dr. Wood's researches on the primitive ova, and on heredity; of Dr. Lewis's on the development of the veins; of Dr. Bremer's on the pulmonary aorta, and of Dr. Eycleshymer's on the cell nucleus, the last being along a novel and important line of investigation.

Professor Minot has published the following papers:—

Notes on Anopheles. *Journal Boston Society Medical Sciences*, Vol. V, pp. 325-329, Pl. XXXI.

Further study of the unit system of laboratory construction. *Science*, Vol. XIII, pp. 409-415.

The embryological basis of pathology. *Science*, Vol. XIII, pp. 481-498, also *Boston Medical and Surgical Journal*, Vol. CLXIV, pp. 295-

305. Delivered as the Middleton Goldsmith Lecture before the New York Pathological Society, March 26, 1901.

Sollen die Bezeichnungen "Somatopleura" und "Splanchnopleura" in ihrem ursprünglichen richtigen oder in dem in Deutschland gebräuchlich gewordenen Sinne gebraucht werden? *Anat. Anzeiger*, Vol. XIX, pp. 203-205.

Improved automatic microtomes. *Journal Applied Microscopy*, Vol. IV, pp. 1317-1320.

Dr. R. T. ATKINSON has published The early development of the circulation in the supra-renal of the rabbit. *Anat. Anzeiger*, Vol. XIX, p. 610.

The following gifts have been received :—

Models of the development of the ear, from Dr. C. J. BLAKE.

Models of human embryos, from Dr. HARRIS KENNEDY.

A valuable collection of lizard's embryos, specially selected to furnish series for the embryological collection, from Dr. KARL PETER, of Breslau, Germany.

A large series of selected lamprey embryos, from Professor S. H. GAGE, of Cornell University.

During the year numerous additions and improvements have been made in the equipment for the elementary general courses.

*Bacteriology*.— Professor H. C. Ernst has devoted much time to the foundation of the American Association of Pathologists and Bacteriologists, and of The Journal of Medical Research, devoted to the publication of original investigations in medicine, and successfully established during the last summer.

With Mr. G. L. Baker, he has carried on a preliminary study on the effect of sunlight and the Röntgen rays upon primary inoculation tuberculosis.

With Mr. N. L. Berry, Jr., he is completing a long series of serial sections (three to four thousand in number) of leprous tissue forwarded for study from Hawaii. It is intended to make this a complete study of the distribution of the bacilli of the disease in the cutaneous tissue.

Dr. W. B. Cannon began a series of studies of the effects of concentrated sunlight as a whole, and of portions of the solar spectrum, upon the vitality and color-producing power of certain of the bacteria.

Dr. C. G. Page made some control experiments in the preparation of special culture media after the method of Rémy, for use in the isolation of the typhoid bacillus from faeces.

Dr. H. J. Perry has devoted much time to staining material from chancroids in a search for Ducray's bacillus, with no very satisfactory results.

Dr. W. H. Robey, Jr., started preliminary work upon the agglutinating reaction in tuberculosis. He has also, with Mr. G. P. Baker, made a study (bacteriological) of the sputa in cases of acute and chronic bronchitis, and phthisis; and with Dr. C. J. White (for the Cancer Commission) is carrying on a study of the bacteria of *Molluscum Contagiosum*, as cases appear.

Dr. J. D. Weis (for the Cancer Commission) has established a plant for the study of the yeasts after Jorgensen's methods, in respect especially to their possible connection with cancer.

Professor F. P. Gorham, of Brown University, has continued his work upon the light producing properties of the phosphorescent bacteria, and during the last summer has apparently secured results of value.

Dr. Langdon Frothingham has carried on the following studies:—

On the diagnosis of rabies by the Strauss method, its value; a statistical and experimental study. (Ready for publication.)

On the frequency and danger of actinomycosis and tuberculosis of the udder of the cow.

On the etiology of contagious epitheliomata of birds.

A study of tumors from animals (for the Cancer Commission).

On the histological lesions in rabies, with Dr. E. W. Taylor.

Dr. Benjamin Tenny continued his studies on Gonorrhoea, and secured some extremely interesting results in the inoculation of the gonococcus in connection with alcohol.

Mr. S. B. Wolbach has made some attempts to apply the Lipmann mercury process of color photography to the microscope, with encouraging results.

Mr. E. Taylor carried out some investigations upon the actual value of "Gram's stain" in the differentiation of many bacteria.

*Chemistry.*—There have been no changes of importance, the instruction having been essentially the same as during the previous year.

During the year the following publications have appeared:—

Clinical Examination of the Urine, by Dr. J. B. Ogden. Published by W. B. Saunders & Co.

Practical Blood Examination, by Dr. H. F. Hewes. Read at the Annual Meeting of the Massachusetts Medical Society, June 12, 1900. Published in Boston Medical and Surgical Journal, August 1, 1901, and in Society Reports.

Hyperacidity of the Stomach, by Dr. H. F. Hewes. Published in Boston Medical and Surgical Journal, November 29, 1900.

*Experimental Pharmacology and Therapeutics.* — Professor Franz Pfaff communicated the results of an experimental work in cases of diverticulum of the oesophagus, at a meeting of the Society of American Physicians, in Washington, in May, 1901. This work will be published in Vol. XVI of the transactions of the same Society.

Dr. Alfred W. Balch published a research on the Supposed Activity of Corn Smut. Journal of the Boston Society of Medical Sciences.

Professor R. W. Tower, of Brown University, studied The Sulphur-Containing Bodies of Human Faeces. He intends to continue the work next year.

Dr. Elliott P. Joslin published the results of an experimental investigation, under the title, The Influence of Bile on Metabolism. Journal of Experimental Medicine, Vol. V, No. 5.

Dr. Joslin also communicated the results of a research on Metabolism in Diabetic Coma, with special reference to Acid Intoxication, at a meeting of the Society of American Physicians, in May. This work will be published in Vol. XVI, of the transactions of the same Society.

Dr. W. L. Smith studied The Influence of Defibrinated Blood on the Secretion of Bile. His research will soon be completed.

Mr. McCrudden studied The Metabolism of Certain Inorganic Salts in the Different Types of Arthritis in Human Beings. He is continuing his research.

*Pathology.* — The method of teaching Pathology which was begun two years ago has given satisfaction to both students and teachers. The general body of students has three hours of laboratory work daily, and sections of ten students are sent from the laboratory for the study of material which cannot be given to the entire class. These sections visit the hospitals, where they are taught and practice the anatomical and bacteriological methods of examining tissues. Sections are also taught in several of the smaller rooms of the building. Material for this study is preserved in such a way that the students can handle, draw and describe the specimens. Each student attends twenty of these sections, thus having not less than forty hours of this work. Both the general laboratory teaching and the sectional teaching are conducted on the principle of giving the students opportunity for objective study. A lecture is given daily in which the subjects studied during the day are described. The object of the lecture is not to impart information but to amplify and coördinate

the knowledge which the student has acquired. No attempt is made to cover the entire subject. The student acquires knowledge of the most essential subjects, and training in observation and description. A large part of the teachers' time is occupied in directing the sectional work.

The greater interest of the students under this method has been striking. The number of incompetents has steadily declined. There is a genuine enthusiasm in the students' study of the subject, and in the long hours of laboratory work their zeal does not flag. They have knowledge which they can use; and they know the methods of obtaining knowledge.

The teachers in the department are a unit in their approval of the system. Teaching which consists in helping others to learn, and in learning with them, is not drudgery but an intellectual stimulus.

The only disadvantage of the method is due to lack of space. Owing to all the available space being used for teaching, research work in the laboratory must be given up during the course.

The following publications have appeared during the last year:—

Carcinoma. By Professor W. T. COUNCILMAN. An article for Buck's *Reference Handbook of the Medical Sciences*.

Necroses of the liver. By Professor F. B. MALLORY. *Journal of Medical Research*.

A simple method of cultivating Anaërobic bacteria. By Dr. J. H. WRIGHT. *Journal of the Boston Society of Medical Sciences*.

Aberrant pancreas in the region of the umbilicus. By Dr. J. H. WRIGHT. *Journal of the Boston Society of Medical Sciences*.

Pathological technique. Second edition. By Drs. F. B. MALLORY and J. H. WRIGHT.

Adipositas. By Dr. J. H. PRATT. An article for Buck's *Reference Handbook of the Medical Sciences*.

Progressive muscular atrophy, without involvement of the pyramidal tracts. By Dr. E. W. TAYLOR. *Journal of the Boston Society of Medical Sciences*.

*Comparative Pathology*. — During the past year the work of undergraduate instruction has been increased by making obligatory the voluntary two weeks' course in protozoan and higher animal parasites as causes of disease, and incorporating it with the regular course in pathology given during the second year. The fourth year elective remains unchanged.

Much time has been given to increasing and cataloguing the collections of pathological material, of slides, lantern-slides, and charts to be used in the courses mentioned above.



Research work on various problems has been continued during the year in the laboratory of the Bussey Institution. However, the meagre equipment and assistance restrict such work within narrow limits and delay its completion.

There is great need in this country for a laboratory in which animal pathology can be studied in a truly comparative manner and in the most thoroughly scientific spirit. It is to be hoped that by a general enlargement of its facilities this department may supply the need in the near future.

The following publications, by Professor Smith, have appeared during the year:—

The antitoxin unit in diphtheria. *Journal Boston Society of Medical Sciences*, 1900, Vol. V, pp. 1-11.

Public health laboratories. Address. *American Public Health Association*, 1900, Vol. XXVI, pp. 295-302. *Boston Medical and Surgical Journal*, 1900, Nov. 15.

Notes on the occurrence of *Anopheles punctipennis* and *A. quadrimaculatus* in the Boston suburbs. *Journal Boston Society of Medical Sciences*, 1901, Vol. V, pp. 321-324.

Syllabus on animal parasites and their relation to pathological processes. 18 pp.

The etiology of malaria, with special reference to the mosquito as an intermediate host. *Journal Massachusetts Association of Boards of Health*, October, 1901.

The following paper is in press:—

The production of sarcosporidiosis in the mouse by feeding infected muscular tissue. *Journal of Experimental Medicine*, Vol. VI, No. 1; also in *Transactions of Association of American Physicians*, Vol. XVI, 1901.

*Surgery.*—The two Surgical Departments, Surgery and Clinical Surgery, have taken a step intended to harmonize the instruction given in those departments and thus avoid some of the complications which have arisen during the gradual development of the various courses in each department.

An Executive Committee has been formed, consisting of the Professor of Clinical Surgery (Chairman), the Professor of Surgery, and the two Assistant Professors. The Assistant Professor of Surgery is the Secretary and executive officer.

Such an organization, now in existence over one year, has enabled the departments to plan a more intelligent arrangement of the course

of study for the students in Surgery, and many of the details are already in successful working order.

Original research in Surgical Pathology has been confined during the past year chiefly to the study of the cause of cancer, under the conditions of the Croft bequest. The subject is so broad that investigations have been carried on along several different lines. Inoculation of animals with certain yeasts, claimed to be the cause of cancer by some observers, have been made. A systematic attempt to classify these so-called pathogenic yeasts is now in progress. A series of cultural experiments with tissue from fresh cancers is being performed, to see if yeasts are constantly present in the tumors. An examination of cancers from many of the lower animals is being made, in order to determine whether the so-called "cancer parasites" are present in animal as well as in human cancers. And, finally, an experimental study of the lesions produced by the *coccidium oniforme* has been completed.

The result of these studies will be published in the second annual report.

The work has been carried on enthusiastically by the members of the Cancer Commission in spite of the very limited laboratory accommodations afforded to the Surgical Department in the School. The field of research could be greatly enlarged were proper facilities offered for the study of many other interesting problems in Surgery.

*Theory and Practice.*—The course in Theory and Practice has been so modified as to promote drill in the use of laboratory methods in the examination of patients. For this purpose the class is divided into sections, each of ten students or less, and an instructor superintends the work of each section.

Under the supervision of Dr. E. G. Cutler, a Manual of Outlines of Medical Diagnosis has been prepared to aid in systematizing the teaching. This Manual has proven so useful, that a considerable demand has been made for it by medical teachers elsewhere.

To encourage the class in its interest in the work of the sections, credit, not exceeding twenty-five per cent. of the highest mark attainable, is given at the final examination of the year.

*Clinical Medicine.*—The only notable change in the methods of instruction in the Department of Clinical Medicine this year is the following: For some years past every fourth-year student has been expected to see, follow up, and report on at least three cases of illness confining the patients to their homes. These cases were selected by the dispensary District Physicians and the work was under the direct supervision of one of the assistants in the depart-

ment. The results have not proved as satisfactory as was hoped for. This branch of instruction has therefore been abandoned, and in its place three weeks' service in a Medical Out-Patient Clinic is provided for each student during his fourth year, under assistants in the Department of Clinical Medicine, and Theory and Practice. This work is, obviously, very practical in character and receives a percentage of the examination mark.

*Hygiene.* — Under the direction of Dr. Harrington, Mr. W. F. Boos has made an investigation of the extent to which foods, as bought in the public markets, are treated with preservatives of an objectionable nature. Several new and improved methods for the quantitative determination of these substances were devised. The investigation is not yet complete.

Under the direction of Dr. Harrington, Dr. D. H. Walker has been engaged in an investigation of the poisonous properties of respired air with especial reference to the question of toxicity of matters given off by the skin. Dr. Walker began also a research on the nature of a substance which was isolated from meat which had caused an outbreak of food poisoning. Both of these investigations were unavoidably interrupted, but are now being renewed.

During the year Dr. Harrington brought out, through Lea Bros. & Co., a text-book in Hygiene entitled *Practical Hygiene*: octavo, 721 pages, illustrated with 12 plates and 105 engravings.

*Museum.* — During the past year the work in the Museum has been carried on in the same manner as formerly. In the first half year it was extensively used by the students in the Pathological course, who, in small numbers, were taken into the alcoves to study the specimens under the Professor of Pathology and his assistants.

The specimens have also been largely drawn upon to illustrate books and articles in preparation. Of the specimens received during the year about one hundred have been permanently preserved in the collection and entered in the catalogue.

On account of the crowded condition of the shelves, it would be necessary to re-arrange the collection entirely if the Museum were to remain for any great length of time in its present quarters. Fortunately, the prospect of new rooms in the buildings given by Mr. Morgan renders such a step unnecessary.

A large addition has been made to the lantern-slides, which have been catalogued separately from the specimens above mentioned.

During the past year there have been the usual number of visitors besides the regular students.

*Scholarships.* — Early in the year the Lucius F. Billings Scholarship, with an income of two hundred dollars, was founded from a bequest under the will of Lucius F. Billings. As the scholarships for the second, third, and fourth classes had been awarded, it was voted that this scholarship for the year 1900–01 should be given to a member of the first class.

The Scholarships and Fellowships were awarded as follows : —

Barringer Scholarship, No. 1,	H. W. Goodall, A.B.,	3d Class.
Isaac Sweetser Scholarship,	R. J. Graves, S.B.,	2d “
Claudius M. Jones “	F. H. Albee, A.B.,	2d “
Hilton “	S. V. R. Hooker, A.B.,	3d “
“ “	C. W. Eveleth, S.B.,	2d “
Barringer “ No. 2,	W. L. Sargent, A.B.,	2d “
Faculty “	E. L. Hunt,	3d “
“ “	G. T. Spicer, A.B.,	2d “
“ “	W. L. Hearn,	3d “
“ “	E. E. Tyzzer, A.M.,	3d “
Eveleth “	A. S. Murphy,	3d “
“ “	R. F. Gibson,	4th “
“ “	F. T. Lewis, A.M.,	4th “
Alfred Hosmer Linder Scholarship,	L. R. Bragg, S.B.,	4th “
Edward Wigglesworth “	A. H. Childs, A.B.,	4th “
Charles B. Porter “	O. C. Blair,	2d “
John Thomson Taylor “	C. S. Oakman, A.B.,	2d “
Orlando W. Doe “	G. C. Moore, A.B.,	3d “
Charles Pratt Strong “	F. E. Clark,	4th “
David Williams Cheever “	C. D. Easton, A.M.,	1st “
Lucius F. Billings “	F. R. Wheelock,	1st “
Lewis and Harriet Hayden “	T. H. Thomas, A.B.,	2d “
John Foster Fund,	E. W. Small,	3d “
“ “ “	C. Duncan, B.L.,	2d “
Cotting Gift,	G. W. Winchester,	3d “

The George Cheyne Shattuck Fellowship was awarded Mr. W. F. Boos, A.B., for a research, in the Laboratory of Hygiene, in the physiological action of certain substances used as food preservatives and the extent to which they are employed in the community.

The Charles Eliot Ware Fellowship was awarded Mr. L. J. Henderson, A.B., of the third class, for studies in osmosis and blood serum.

The John Ware Fellowship was awarded Assistant Professor R. W. Tower, of Brown University, for a research on sulphur-compounds of normal human faeces, in Assistant Professor Pfaff's laboratory, with a view to the Ph.D. degree of Harvard.

Dr. Robert Leonard Emerson was appointed to a John Harvard Fellowship.

No essay was submitted for the William H. Thorndike prize.

The statistics of the School will be found in the following tables :

## COURSES OF INSTRUCTION, 1900-01.

## FIRST YEAR.

	Students examined.
Anatomy. — Professor T. DWIGHT, Associate Professor DEXTER, Demonstrator BROOKS, Instructor TENNEY, Assistant LOTHROP, Assistant YOUNG, Assistant WHITESIDE, Assistant MOSHER, Assistant DAVIS, Assistant ALLEN, Assistant BUTLER, Assistant CODMAN, Assistant MARCY, Assistant STETSON, Assistant WARREN.	169
Physiology. — Professor H. P. BOWDITCH, Associate Professor W. T. PORTER, Assistant CLEGHORN, Assistant FRANZ, Assistant KOCH, Instructor MATHEWS, Instructor CANNON.	178
Histology and Embryology. — Professor MINOT, Assistant STUBBS, Assistant WOODS, Assistant DONOGHUE, Assistant LARRABEE, Assistant BLAKELEY, Assistant CALLAHAN, Austin Teaching Fellow EYLESHYMER, Austin Teaching Fellow ATKINSON.	165
Physiological Chemistry. — Associate Professor HILLS, Assistant CONNOLLY, Assistant BADGER, Assistant LADD, Assistant MUSGRAVE.	178

## SECOND YEAR.

Bacteriology. — Professor ERNST, Assistant COOLIDGE, Assistant DENNY, Assistant PAGE, Assistant PERRY, Assistant ROBEY, Assistant EVERETT.	116
Advanced Anatomy. — Professor T. DWIGHT, Associate Professor DEXTER.	140
Pathology and Pathological Anatomy. — Professor COUNCILMAN, Assistant Professor MALLORY, Instructor TAYLOR, Instructor WRIGHT, Instructor PRATT, Demonstrator NICHOLS, Assistant MAGRATH, Assistant VERHOEFF.	129
Clinical Chemistry. — Professor WOOD, Instructor OGDEN, Assistant CONNOLLY, Assistant BADGER, Assistant LADD, Assistant MUSGRAVE.	135
Therapeutics. — Assistant Professor PFAFF, Assistant JORDAN, Assistant BALCH.	149
Theory and Practice. — Instructor CUTLER.	
Clinical Medicine. — Instructor SEARS, Instructor VICKERY, Assistant BARTOL, Assistant PRESCOTT, Assistant J. M. JACKSON, Assistant AMES, Assistant CABOT.	
Surgery. — Assistant Professor BURRELL, Instructor C. A. PORTER, Instructor MUNRO, Demonstrator NICHOLS.	

## THIRD YEAR.

Theory and Practice of Medicine. — Professor FITZ, Instructor CUTLER.	140
Obstetrics. — Professor W. L. RICHARDSON, Asst. Professor C. M. GREEN, Instructor REYNOLDS, Assistant HIGGINS, Assistant NEWELL.	138
Clinical Obstetrics. — Professor W. L. RICHARDSON, Asst. Professor C. M. GREEN, Instructor REYNOLDS, Assistant HIGGINS, Assistant NEWELL.	

Dermatology. — Professor WHITE.	139
Diseases of the Nervous System. — Professor PUTNAM.	137
Diseases of Children. — Professor ROTCH, Instructor BUCKINGHAM, Assistant CRAIGIN, Instructor MCCOLLOM, Instructor MORSE.	138
Psychiatry. — Instructor COWLES.	138
Gynaecology. — Asst. Professor DAVENPORT, Instructor HAVEN, Instructor REYNOLDS, Assistant STORER.	135
Surgery and Clinical Surgery. — Professor WARREN, Professor C. B. PORTER, Asst. Professor BURRELL, Asst. Professor M. H. RICHARDSON, Instructor C. A. PORTER, Lecturer BEACH, Lecturer GAY, Instructor MONKS, Assistant SCUDDER, Assistant THORNDIKE, Assistant LOTHROP, Instructor MUNRO, Assistant MUMFORD, Assistant DWIGHT, Assistant BLAKE, Assistant LUND, Assistant CABOT, Demonstrator NICHOLS, Assistant BALCH, Assistant BREWSTER.	181
Clinical Medicine. — Professor SHATTUCK, Instructor WITHINGTON, Instructor JACKSON, Instructor SEARS, Assistant BARTOL, Assistant AMES.	

## FOURTH YEAR.

Clinical Surgery. — Professor C. B. PORTER, Asst. Professor BURRELL, Asst. Professor M. H. RICHARDSON, Instructor MONKS, Instructor MUNRO, Assistant THORNDIKE, Assistant E. W. DWIGHT, Assistant J. B. BLAKE, Assistant LUND, Instructor C. A. PORTER, Assistant SCUDDER, Assistant MUMFORD, Assistant LOTHROP, Assistant COBB.	122
Clinical Medicine. — Professor SHATTUCK, Instructor MCCOLLOM, Assistant R. C. CABOT, Instructor SEARS, Instructor WITHINGTON, Instructor JACKSON.	121
Ophthalmology. — Professor WADSWORTH, Assistant STANDISH, Assistant CHENEY, Assistant JACK.	118
Otology. — Professor BLAKE, Professor J. O. GREEN, Assistant HAMMOND.	114
Laryngology. — Instructor DEBLOIS, Instructor FARLOW, Instructor COOLIDGE.	117
Legal Medicine. — Professor DRAPER, Instructor E. W. DWIGHT.	121
Syphilis. — Instructor POST.	120
Orthopedics. — Asst. Professor BRADFORD.	71
Hygiene. — Asst. Professor HARRINGTON.	128
Psychiatry. — Instructor COWLES, Instructor LANE.	
Ovarian Tumors. — Lecturer HOMANS.	
Genito-Urinary Surgery. — Instructor WATSON, Assistant THORNDIKE.	
Municipal Sanitation. — Lecturer DURGIN.	

*Fourth Year Electives.*

Ophthalmology. — Professor WADSWORTH.	3
Otology. — Professor BLAKE, Professor J. O. GREEN, Assistant HAMMOND, Assistant CROCKETT.	3
Dermatology. — Instructor BOWEN, Assistant C. J. WHITE.	38
Diseases of the Nervous System. — Professor PUTNAM, Instructor WALTON, Instructor KNAPP.	15
Gynaecology. — Asst. Professor C. M. GREEN.	33
Operative Obstetrics. — Asst. Professor C. M. GREEN, Instructor REYNOLDS, Assistant HIGGINS, Assistant NEWELL.	57
Operative Surgery. — Professor C. B. PORTER, Assistant MIXTER, Instruc- tor MUNRO, Instructor MONKS, Assistant BALCH, Assistant SCUDDER, Assistant THORNDIKE, Assistant MUMFORD, Demonstrator NICHOLS, Assistant BLAKE, Assistant DWIGHT, Assistant LUND, Instructor C. A. PORTER, Assistant BREWSTER, Assistant COBB, Assistant CABOT.	74
Bacteriology. — Professor ERNST, Assistant COOLIDGE, Assistant DENNY, Assistant PERRY, Assistant PAGE, Assistant ROBAY.	12
Orthopedics. — Asst. Professor BRADFORD.	50
Clinical Microscopy. — Curator WHITNEY.	10
Clinical Chemistry. — Professor WOOD, Instructor HEWES, Instructor ODEN.	8
Anatomy. — Demonstrator BROOKS.	20
Embryology. — Professor MINOT, Assistant WOODS, Austin Teaching Fel- low ATKINSON.	3
Histology of the Nervous System. — Professor MINOT, Assistant WOODS, Austin Teaching Fellow ATKINSON.	2
Physiological Chemistry. — Asst. Professor PFAFF.	1
Comparative Etiology of Infectious Diseases. — Professor SMITH.	2
Physiology. — Professor BOWDITCH, Associate Professor W. T. PORTER.	2
Hygiene. — Asst. Professor HARRINGTON.	1

TABLE I.—GENERAL STATISTICS OF THE SCHOOL.

EXAMINATIONS FOR ADMISSION.

		Physic.	Latin.	Eng-lish.	Elec-tive 1.	Elec-tive 2.	Gen. Chem.	Qual. Analysis.	
1900.	June	Offered . . . . .	59	62	74	70	55	55	48
		Conditioned . . . . .	11	21	48	19	12	20	5
	Sept.	Offered . . . . .	57	56	74	55	44	70	36
		Conditioned . . . . .	10	13	20	11	15	11	3

New matriculants . . . . . 196 { Graduates in Medicine . . . . . 3  
 Undergraduates . . . . . 193

Of these 42.34 % presented a degree in Letters, Science, or Medicine.

The whole number of students in attendance : —

In courses for graduates . . . . .	31
Fourth Class . . . . .	115
Third Class . . . . .	125
Second Class . . . . .	154
First Class . . . . .	198
<b>Total . . . . .</b>	<b>623</b>

Applicants for Degree . . . . .	131
Rejected . . . . .	15
<b>Graduated . . . . .</b>	<b>116</b>

Of the 116 students who received the degree of Doctor of Medicine, 29 received the degree *cum laude*.

	SUMMER COURSES.					GRADUATE COURSES.				
	1897.	1898.	1899.	1900.	1901.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.
Courses taken . . . . .	130	118	142	167	151	175	114	134	63	40
Students . . . . .	110	107	116	149	126	75	60	50	46	29
Receipts . . . . .	\$3129	\$3360	\$3895	\$4695	\$4275	\$3810	\$3780	\$2861.25	\$1465	\$1065



TABLE II. — FINAL EXAMINATIONS.

	FIRST CLASS.						SECOND CLASS.																
	Histology.		Bacteriology.		Physiology.		Chemistry.		Anatomy.		Physiology.		Clinical Chemistry.		Path. Anatomy.		Adv. Anatomy.		Therapeutics.		Bacteriology.		
	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	
1897	Passed	136		111		136		113		126		123		104		110		108					
	Rejected	11	7	31	22	24	15	47	30	88	22	17	12	36	26	31	22	64	37				
	Total	147		142		160		160		162		140		140		141		172					
1898	Passed	129		117		119		121		120		120		107		99		111					
	Rejected	13	9	27	18	24	16	40	25	24	16	16	12	50	35	26	41	27					
	Total	142		144		143		161		144		136		157		125		152					
1899	Passed	124		118		117		117		115		113		109		105		83					
	Rejected	22	15	27	18	28	19	43	27	39	25	7	6	22	20	18	14	51	38				
	Total	146		145		145		160		154		120		137		123		134					
1900	Passed	146		129		129		113		116		133		148		110		109					
	Rejected	14	9	18		12	12	9	35	23	15	10	5	3	52	22	62	36					
	Total	160		147		147		125		151		148		153		142		171					
1901	Passed	141		147		143		143		126		123		122		88		89					
	Rejected	24	13	31		17		26	15	52	30	12	9	7	6	52	37	60	40				
	Total	165		178		160		169		178		135		129		140		149					

TABLE II. — FINAL EXAMINATIONS, CONTINUED.

	THIRD CLASS.										FOURTH CLASS.																											
	Theory and Practice.		Surgery.		Obstetrics.		Diseases of Children.		Dermatology.		Gynaecology.		Nervous Diseases.		Psychiatry.		(Clinical) Medicine.		Clinical Surgery.		Ophthalmology.		Otolaryngology.		Legal Medicine.		Syphilis.		Orthopedics.		Hygiene.							
	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%		
1897																																						
Passed	124	122	123	66	125	136	131	136	0	0	89	82	72	91	94	83	2	1	93	89	1	1	1	1	3	3	96	93	89	89	1	1	0	0	1	1		
Rejected	14	19	13	18	13	85	56	22	15	8	7	11	12	26	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
Total	142	141	141	151	147	144	148	136			96	93	99	93	96	96	4	4	94	90	3	3	4	4	5	5	98	94	90	90	3	3	3	3	3	3		
1898																																						
Passed	128	128	118	154	115	121	124	128	7	6	117	119	104	120	129	123	0	0	123	100	0	0	0	0	0	0	134	139	127	120	0	0	0	0	0	0		
Rejected	10	8	6	15	13	25	14	28	19	10	14	16	20	16	0	0	0	0	123	100	0	0	0	0	0	0	115	134	127	120	0	0	0	0	0	0		
Total	138	137	136	179	143	131	132	132	26	16	131	136	124	136	129	123	0	0	141	127	0	0	0	0	0	0	141	141	127	120	0	0	0	0	0	0		
1899																																						
Passed	118	119	110	93	116	116	118	105	14	7	117	119	104	120	129	123	0	0	123	100	0	0	0	0	0	0	134	139	127	120	0	0	0	0	0	0		
Rejected	8	6	6	21	10	49	34	21	15	7	12	16	20	16	2	2	2	2	123	100	0	0	0	0	0	0	137	138	127	120	0	0	0	0	0	0		
Total	126	127	131	142	137	125	127	123	29	14	129	135	124	140	131	125	2	2	141	127	0	0	0	0	0	0	141	141	127	120	0	0	0	0	0	0		
1900																																						
Passed	114	116	116	129	114	120	119	115	6	3	115	117	110	12	115	114	1	1	121	88	0	0	4	4	0	0	119	119	121	119	0	0	0	0	0	0		
Rejected	7	6	4	12	9	13	10	7	0	0	9	7	16	1	5	5	2	2	121	88	0	0	0	0	0	0	119	119	121	119	0	0	0	0	0	0		
Total	125	121	128	139	127	120	126	123	6	3	124	124	126	123	120	119	3	3	122	88	0	0	4	4	0	0	119	119	122	120	0	0	0	0	0	0		
1901																																						
Passed	122	128	129	136	109	128	125	129	7	5	111	120	108	114	117	121	2	2	121	71	0	0	0	0	0	0	121	120	121	120	0	0	0	0	0	0		
Rejected	8	6	4	9	6	2	1	30	22	7	10	8	10	8	0	0	2	2	121	71	0	0	0	0	0	0	121	120	121	120	0	0	0	0	0	0		
Total	140	131	138	138	139	135	137	138	29	12	121	122	118	114	117	121	2	2	121	71	0	0	0	0	0	0	121	120	121	120	0	0	0	0	0	0		

TABLE II. — FINAL EXAMINATIONS, CONTINUED.

		FOURTH CLASS. — ELEMENTS.																																				
		Ophthalmology.		Oology.		Gynaecology.		Dermatology.		Diseases of Nervous System.		Operative Obstetrics.		Operative Surgery.		Bacteriology.		Orthopedics.		Clinical Microscopy.		Chemical.		Anatomy.		Physiology.		Embryology.		Hygiene.		Physiological Chemistry.		Comparative Etiology of Infectious Diseases.		Histology of the Nervous System.		
		%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%		
1897	Passed	5	1	28	6	55	46	45	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Rejected	0	0	0	0	23	3	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	5	1	33	6	78	49	46	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1898	Passed	5	1	19	45	71	70	24	10	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Rejected	0	0	3	9	8	1	3	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	5	1	22	54	79	71	27	21	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1899	Passed	6	7	16	57	38	88	18	25	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rejected	1	0	1	6	3	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	7	7	17	62	41	88	20	26	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900	Passed	3	4	11	54	59	61	6	40	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rejected	0	0	0	3	1	7	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	3	4	11	57	60	68	6	43	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1901	Passed	3	3	33	32	56	71	10	50	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rejected	0	0	0	4	1	3	2	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	3	3	33	36	57	74	12	67	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

The falling off in the attendance in Summer Courses is accounted for by the fact that hereafter candidates for admission to the School must present a degree in Arts, Literature, Philosophy, or Science, from a recognized college or scientific school, or they must in some way have acquired an equivalent education and training. Heretofore a large number of undergraduate students have taken the summer courses in General Chemistry and Qualitative Analysis to prepare for the admission examinations in these subjects. The number registered for these courses in the summer of 1900 was 88; in the summer of 1901 only 9 were in attendance.

WILLIAM L. RICHARDSON, *Dean.*

## THE DENTAL SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR, — As Dean of the Dental School I have the honor to present my report for the academic year, namely, from September 27, 1900, to September 26, 1901.

The number of students enrolled was 127, divided as follows:—

Third-year students . . . . .	53
Second-year students . . . . .	30
First-year students . . . . .	<u>44</u>
	127
Withdrew during the year . . . . .	7

In June 46 students applied for the degree and 17 failed, leaving a graduating class of 29, of whom 5 received the degree *cum laude*.

The courses of instruction during the year were practically the same as last year, with the exception of Bacteriology, which was changed from the first to the second year. The instruction has been as follows:—

**Anatomy.**—Professor T. DWIGHT, Assistant Professor DEXTER, Demonstrator BROOKS, Instructor TENNEY, Assistants LOTHROP, ALLEN, CODMAN, MOSHER, YOUNG, BUTLER, MARCY, WHITESIDE, DAVIS, STETSON, WARREN.

**Physiology.**—Professor H. P. BOWDITCH, Associate Professor W. T. PORTER, Instructors MATHEWS, CANNON, Assistants CLEGHORN, PARKER, FRANZ, KOCH.

**Histology and Embryology.**—Professor MINOT, Assistants BLAKELEY, DONOGHUE, LARRABEE, STUBBS, WOODS, CALLAHAN.

**Chemistry.**—Associate Professor HILLS, Assistant SMITH.

**Crown and Bridge Work and Metallurgy.**—Assistant Professor COOKE. 32 lectures.

**Neurology.**—Instructor E. W. TAYLOR. 4 lectures.

**Materia Medica and Therapeutics.**—Professor BRIGGS, 32 lectures; Assistant RODGERS, 32 recitations.

**Dental Pathology.**—Professor BRACKETT. 32 lectures.

**Surgical Pathology and Surgery.**—Professor WARREN, Instructor MONKS. 14 lectures.

**Mechanical Dentistry and Orthodontia.**—Professor SMITH. 32 lectures.

**Orthodontia.**—Professor SMITH, 32 clinics; Assistant BAKER, 64 hours.

**Mechanical Dentistry.**—Clinical Instructor J. D. DICKINSON. 8 clinical lectures.

- Mechanical Dentistry. — Clinical Lecturer STODDARD. 16 lectures and demonstrations.
- Mechanical Dentistry, laboratory, Juniors. — Assistant Demonstrator CHASE, Instructors FORREST, MEADER. 544 hours.
- Mechanical Dentistry, laboratory, Seniors. — Demonstrator CROSS, Instructors HAYDEN, ELDRED, BURNHAM, HALBY, BIXBY, GRANT, CHUTE. 496 hours.
- Practical Dentistry. — Instructor UPHAM. 14 lectures.
- Operative Dentistry and Dental Jurisprudence. — Clinical Lecturer CLAPP, 12 lectures; Instructor STARRATT, clinical assistant.
- Operative Dentistry and Oral Surgery. — Professor FILLEBROWN, 32 lectures; Assistant BALDWIN.
- Operative Dentistry. — Assistant Professor POTTER. 32 lectures.
- Operative Dentistry. — Clinical Instructor WERNER. 13 lectures and demonstrations.
- Operative Dentistry, infirmary, Juniors. — Assistant Demonstrator FARRINGTON, Instructors WHITE, D. W. DICKINSON. 448 hours.
- Operative Dentistry, infirmary, Seniors. — Demonstrator McMEEKIN, Instructors PAUL, EDDY, BLAISDELL, PERKINS, TAFT, GRAY, HARDING, HOLMES, F. T. TAYLOR, BRADLEY. 624 hours.
- Mechanical Treatment of Fractured Jaws, Cleft Palates, and other Deformities. — Instructor MORIARTY. 32 lectures.
- Extracting and Anaesthesia (Demonstrations). — Instructors HART, SQUAREBRIGS. 160 afternoons.

The following tables show the work done in the different departments: —

#### OPERATIVE DEPARTMENT.

##### Surgical clinics by Professor FILLEBROWN.

	Number of cases	
Necrosis . . . . .	7	
Abscess . . . . .	11	“ “
Antrum disease . . . . .	6	“ “
Epulis . . . . .	6	“ “
Hare lip . . . . .	3	“ “
Cleft palate . . . . .	7	“ “
Excision of inferior dental nerve . . . . .	1	“ “

#### INFIRMARY.

No. of sets of teeth cleaned . . . . .	1,781
“ patients treated for diseases of the teeth and gums . . . . .	3,097
“ fillings, gold . . . . .	3,551
“ “ amalgam . . . . .	2,097
“ “ cement . . . . .	2,114
“ “ gutta percha . . . . .	3,720
“ porcelain inlays . . . . .	10
Total No. of patients treated . . . . .	7,021
“ “ operations performed . . . . .	21,557

## MECHANICAL DEPARTMENT.

## SERVICE TO PATIENTS.

Sets of artificial teeth . . . . .	358
Sets of artificial teeth repaired . . . . .	97
Cases of fractured jaws . . . . .	48
Cleft palate appliances . . . . .	8
Splints for cleft palates . . . . .	3
Obturator and appliances for cleft palates . . . . .	6
Appliances for nose . . . . .	3
Plugs for antrum . . . . .	4

## Under the direction of Professor SMITH :—

Cases of irregularity treated and corrected . . . . .	114
Orthodontia appliances . . . . .	262
Articulated models of regulating cases . . . . .	217

## Under the direction of Asst. Professor COOKE and Dr. ELDRÉD :—

Crowns and caps . . . . .	107
Crowns repaired . . . . .	11
Pieces of bridge work . . . . .	18
“ “ “ repaired . . . . .	6

## MECHANICAL LABORATORY — PRACTICE WORK.

Sets of artificial teeth . . . . .	320
Crowns and bridges . . . . .	456
Porcelain tips . . . . .	1
Porcelain inlays . . . . .	17
Carved teeth models . . . . .	36

At the close of the year the following men retired from the teaching staff: Drs. Moriarty, Bixby, F. T. Taylor, White, Haley, and Meader. Of these men Dr. Moriarty has given to the School the longest service. He was appointed Demonstrator of Operative Dentistry in 1889, Demonstrator of Mechanical Dentistry in 1890, and Instructor in the Mechanical Treatment of Fractured Jaws and Cleft Palates in 1897. He was a good teacher and a hard worker in the interest of the School. Dr. Bixby has served the School for eight years as Instructor in Mechanical Dentistry; Drs. Taylor and White for six and five years, respectively, as Instructors in Operative Dentistry; Drs. Haley and Meader for five and two years, respectively, as Instructors in Mechanical Dentistry. The service that these men have given to the School has been at a pecuniary sacrifice to themselves, and for these services we are much indebted.

Dr. Forrest, who was appointed as Instructor in Mechanical Dentistry in 1899, was transferred to the Operative Department as Instructor.

New appointments were made as follows :—

EVAN P. WENTWORTH, D.M.D., *Instructor in Operative Dentistry.*  
BURT M. BRISTOL, D.M.D., *Instructor in Operative Dentistry.*  
LESLIE H. NAYLOR, D.M.D., *Instructor in Operative Dentistry.*

The library and museum, under the direction of Dr. Boardman, have steadily increased in their usefulness to students and alumni. During the year 36 volumes have been added, making the total number of volumes 529. Of pamphlets there are 3,178. To the museum 31 specimens have been added.

Alumni Day was observed as usual with most gratifying results, a large number of graduates returning to take part in the exercises of the day and evening.

EUGENE H. SMITH, *Dean.*



## THE VETERINARY SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY: —

SIR, — As Dean of the School of Veterinary Medicine, I have the honor of making the following report for the year 1900–01.

Nine new students registered for the year, two of whom had previously attended other veterinary schools, one being a graduate; a third was a graduate of Harvard College.

There were three students in the second class, six in the third, and two who took a fourth year in the school; thus making a total of twenty students, — five less than for the previous year.

There were ten applications for the degree: six from the Class of 1901, three from that of 1900, and one from the special list. Seven of these were successful, all having completed three years of study and passed our examinations in all of the required subjects of the entire three-year course. The degree, *cum laude*, was given to William Thomas Conway, of the Class of 1901.

One Faculty Scholarship of \$150 was awarded to Mr. William Thomas Conway, of the third class. Of the six new scholarships, of \$50 each, four were awarded, — to S. C. Babson and H. H. Delano, Jr., of the second class, and C. D. Huxtable and F. H. Carlisle, of the first class, all of whom had fulfilled the necessary conditions in a highly creditable and satisfactory manner.

With the changes in the methods of instruction, the addition to the teaching staff, and the list of subjects to be taught, as described at length in the report of last year, the work of the School began and was carried on throughout the year with great satisfaction, both to the Administrative Board and to the students.

Early in November, the Corporation passed a vote ordering that no new students in Veterinary Medicine be received until further notice from that board; that the Free Clinic should be discontinued at once; and that the Veterinary Hospital should be closed on June 1, 1901.

It was generally understood among us that this action had become necessary because the School had never received endowment, and that the Corporation were unable to carry longer the constantly accumulating deficits in the School's accounts, although they did intend to complete all contracts with the students already registered at the time when the vote was passed.

It was at first hoped that this officially declared necessity, threatening as it did the life of the School, would produce the required endowment, especially because of the University's long and unaided endeavor, in the face of many difficulties, to establish firmly a school of high grade; and because similar institutions in the Universities of Pennsylvania and Cornell had been handsomely taken care of in this respect. This hope had finally to be abandoned; for, although much sympathy and interest in the School were publicly and privately expressed, and a generous sum of money had been promised us by a few individuals, it was evident by midsummer that the required amount could not be obtained; and it became necessary to consider what should be done with the students during the quickly coming year, in view of the facts that we possessed no further means within ourselves of giving practical instruction, that several of the instructors had already resigned their positions, and that the heretofore well maintained interest of those remaining had been appreciably cooled.

It was finally decided that Harvard University would pay the tuition of the remaining students at the Veterinary Department of the University of Pennsylvania; and all but three went to that institution at the beginning of the new academic year. Two were transferred to the Medical School, and one entered another Veterinary School.

The Free Clinic at the Piedmont Street quarters was definitely closed November 22, 1900, with the expiration of the lease which had been paid for by the Visiting Committee; but the work was continued at the Village Street building until the end of the year, under the explicit understanding that the University should not be called upon to pay any expense that might be incurred thereby. The number of cases treated at the clinic up to the time that it was closed was fully up to the average of the previous year.

On June 1, the University's connection with the Hospital ceased.

On the departure of the students for Philadelphia, the resignations of the remaining instructors were sent to the Corporation; and the School was permanently closed, after a not uneventful or unworthy career of nineteen years.

CHARLES P. LYMAN, *Dean.*

## THE VETERINARY HOSPITAL.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—As Surgeon-in-Charge of the Hospital of the School of Veterinary Medicine, I have the honor to submit the following report for the year 1900–01.

Albert J. Sheldon, D.V.S., was reappointed Assistant Surgeon to serve until June 1, 1901.

The following members of the Third-year Class were appointed House Surgeons:—

WILLIAM THOMAS CONWAY,  
THOMAS STEPHEN SHEEHAN,  
FRANCIS JOSEPH SULLIVAN.

In accordance with the recommendation of the Committee on Courses of Study and the vote of the Administrative Board, four series of practical exercises were added to the instruction heretofore given in the Hospital, as follows:—

Examination for Soundness . . . . .	Dr. Osgood.
Bandaging and Apparatus . . . . .	“ “ and Assistant.
General Stable Management of Sick Animals “ “ “	“ “ “
Auscultation and Percussion . . . . .	Drs. Lyman and Delano.

Owing to the resignation of Dr. Leonard as Clinical Instructor, Dr. Delano was appointed Assistant in Clinical Medicine; in other respects the clinical instruction was given as heretofore by Drs. Osgood, Howard, and Sheldon.

An unusually large number of surgical operations were performed in the presence of the class, the students in all cases assisting under the immediate supervision of the Hospital Staff. As heretofore the interest of the students in this part of their course and the results of their work were most satisfactory.

The number of cases treated in the Hospital and the “ Out Clinic ” was proportionately the same as for the previous year. The receipts were, however, much reduced by the operation of the Corporation’s vote in November, 1900, to close the Hospital on June 1st, 1901, and to receive no subscriptions after the date of the vote. In accordance with this vote the Hospital passed out of the control of the Corporation on June 1st, 1901.

The value of the Hospital as an appendage to the Veterinary School, ever since the establishment of the latter in 1883, has been manifest in the generous opportunities which it gave the students for practical work, and for extended observation in connection with their courses of study; and it has received recognition from all interested parties. But its large and constant public service in alleviating the sufferings of all classes of domestic animals, and in extending their period of usefulness, has been equally manifest and important, although such service could not be expected to receive general recognition.

In taking leave of the Hospital work as a department of the Veterinary School and of the University, and in severing the always pleasant relations which I have had with the allied departments of University work, I feel that the Hospital has proved its value, and that it has a creditable record; that its abandonment has been considered necessary, will be regretted by none more deeply than by those who through official supervision of its work have best known the scope of its service.

FREDERICK H. OSGOOD,  
*Surgeon-in-charge.*

## THE BUSSEY INSTITUTION.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—I respectfully submit the following report on the Bussey Institution for the year 1900–01.

As has been the case in several of the years last past, the number and character of the students attending the School of Agriculture and Horticulture during the year has shown decided improvement.

Instruction was given throughout the year in Agriculture, Horticulture, Agricultural Natural History, Cattle and Cattle Feeding, Agricultural Chemistry, and Chemical Analysis, by Messrs. Hersey, B. M. Watson, E. W. Morse and Storer.

Thirty-four students were in attendance, of whom 23 were regular students seeking the degree of Bachelor of Agricultural Science, as given on recommendation of the instructors at the Bussey Institution; 5 were students of Landscape Architecture in the Lawrence Scientific School aiming at the degree of Bachelor of Science, and 6 were Special Students not candidates for any degree.

The degree of Bachelor of Agricultural Science was conferred upon two candidates at Commencement.

One Bulletin by Messrs. Morse and Hersey was published. It was entitled "On the Power of Some Peach Trees to Resist the Disease called 'Yellows.'"

There is urgent need of room for the proper conduct of the regular classes of the school, and a library building is needed also in which books relating specially to Agriculture and Horticulture may be kept in proper order and be allowed to accumulate with some chance of their permanent preservation.

F. H. STORER, *Dean.*

## THE LIBRARY.

TO THE PRESIDENT OF THE UNIVERSITY: —

SIR, — I have the honor to submit my fourth annual report on the Library, covering the year 1900–01.

In my last three reports I stated as clearly and as forcibly as I could the Library's need of a new building or of an enlarged and improved building. The lack of this enlargement cramps the Library's activities on every side, abridges its usefulness, and makes the work of administration more difficult and in some degree less efficient. Every year that relief is delayed the problem becomes more serious. Every year more varied service is rightly demanded of us, and we are less able to render it. Every year our accessions increase,\* involving more and more work on the part of the staff; but the staff has not been and cannot be enlarged because of the lack of both money and room.

Further delay means increasing and probably permanent injury to the Library, and may lead to the adoption of a policy of splitting up the great Central Library into numerous departmental collections. It is now so long that the Library has been unable to offer to professors and advanced students the facilities they need for the use of its books, that each department, in planning for the improvement of its work, is inclined to accept as permanent the present crippled condition of the Central Library, and to demand a special collection in a separate building for its individual use. Under present conditions such separate collections are in fact necessary, but if this should lead to the general installation of extensive special collections in separate departmental buildings, the gradual disintegration of the Central Library is likely to follow. The separation from the main library of some of the scientific and technological divisions may possibly be found to have enough advantages to outweigh the general disadvantage; but to drift into a policy that involves the separation from the general library of such subjects as Education, Philosophy, or any division of Literature or History, would be a calamity that would affect unfavorably the whole educational method and standing of the College. For the study of such subjects, interwoven as each necessarily is with countless others, a central comprehensive library should

\* The accessions of the last *three* years are about equal to the accessions of the previous *five* years.

always remain the headquarters ; but it cannot continue to be so in fact, and to be so regarded, unless it can furnish to each department the opportunity to make use of its material to the best advantage.

For relief, it seems to me, we can only look to some lover of learning who unites generosity toward the College and a broad-minded liberality with the possession of large resources ; for it is evident that our needs are really two — ample means to build a library as perfectly adapted to its purpose as good design and wise expenditure can make it, and an increased endowment to meet the necessarily larger cost of administration in the larger building.

As a preliminary measure, the Library Council has asked the Corporation to appoint a committee to make a careful study in detail of what a new or enlarged building should provide, what rooms and of what size, how related, and for what purposes. This committee, it is expected, will also collect, examine, and digest useful ideas embodied in recent library buildings in other places, and will call for suggestions from members of the Faculty here. Such a study of the elements desired naturally precedes the architect's study of how they may be combined in a building, and should result in a definite and detailed statement of what the Library needs.

A good beginning has been made on a collection of photographs and other prints illustrating the history and topography of the College. The material of this kind already on hand, but scattered, has been brought together and mounted on cards of two uniform sizes, 18 by 14 inches and  $9\frac{1}{2}$  by  $6\frac{1}{2}$  inches, and additions have been made as opportunity occurred. A full set of the photographs taken for the Class of 1858, both portraits and views, being offered for sale at a moderate price, was bought ; an incomplete duplicate album of 1885 had lately been given to the Library by the Class Committee and could be broken up ; a number of views taken in 1875 were found for sale at a nominal price and were secured ; and other smaller lots have turned up from time to time. The collection now numbers 721 cards. The Class Albums preserved in the Harvard Collection contain a great variety of interesting views and portraits which, however, must not be removed ; but I should be very glad if duplicate copies of the class albums might some time find their way to the Library and provide further material for this systematic collection. The smaller cards are arranged like the cards of a card catalogue in large drawers, and are numbered so as to fall into a natural order and keep all views of the same building together. The larger cards are kept in portfolios, arranged in the same order. The collection of views is followed by a collection of portraits of Harvard men, and for

the increase of this, also, the Library must depend in part on the kind coöperation of its friends. The members of the Harvard Camera Club have contributed many current pictures; and I hope to receive from all photographers, both amateur and professional, assistance in rounding out the collection. Views, both old and new, of the College buildings and of the surroundings of the College, portraits, groups, and snap-shots of athletic contests or of passing events are all desirable.

At the time of my last report the final steps had not been taken in the prosecution of the case against Dr. Charles E. Cameron, charged on two counts, stealing book-plates from the Library, and having stolen property in his possession. Dr. Cameron pleaded guilty, and his case came up for judgment on November 8, 1900, when, the greater part, but not the whole, of the book-plates having been restored to the Library, the persons to whom he had sold or given the plates having been settled with by Dr. Cameron in a manner satisfactory to them, as witnessed by their signed statements delivered to the Library, and the expenses incurred by the College for rebinding of books, for employment of detectives, and for legal services (amounting in all to \$433.77) having been covered by payments to the College on Dr. Cameron's part, the College consented to leave the matter of the sentence to be imposed entirely to the District Attorney and the Court. The Court accordingly sentenced the defendant on one of the two counts to pay a fine of \$150 (in addition to the amount of restitution he had made to the College and to the purchasers of the plates), and put the other count on file (to be brought up again if desirable later), Dr. Cameron being required to recognize personally in the sum of \$1,000 for his appearance. I make this detailed statement of the matter in order that there may be no misunderstanding in regard to the nature of the case and its results, the College being under obligation, in my opinion, to protect the interests of libraries and collectors to the extent of its power. I ought to add that a number of the stolen plates have not yet been traced and recovered, and collectors should be on their guard against accepting Harvard plates of the older engraved varieties which do not bear unmistakable evidence of having been honestly acquired.

No new numbers of the Bibliographical Contributions have been issued, but material for four new numbers is in hand and I hope may soon be published. A fund of from five to twenty-five thousand dollars could be usefully applied to the support of this series and of other publications which the Library will desire to issue in the future.

The accessions to the University Library for the year, and the



present extent both of the Gore Hall collection and of the several departmental libraries are shown in the following table : —

ACCESSIONS.	Volumes added.	Present extent in	
		Volumes.	Pamphlets.
Gore Hall (College Library) . . . . .	13,797	387,097	250,000
Law School . . . . .	5,902	62,523	6,421
Divinity School . . . . .	639	30,624	7,011
Medical School . . . . .	37	2,316	. .
Dental School . . . . .	36	529	3,178
Bussey Institution . . . . .	80	4,180	10,950
Museum of Zoölogy . . . . .	862	33,329	25,819
Peabody Museum . . . . .	418	2,623	2,703
Astronomical Observatory . . . . .	361	10,077	16,206
Gray Herbarium . . . . .	154	7,809	5,886
Arnold Arboretum . . . . .	856	8,264	. .
Twenty-seven Special Reference Libraries .	1,684	26,517	. .
Total . . . . .	24,826		
Deduct, transfers between Gore Hall and Department Libraries . . . . .	588		
Total . . . . .	24,238	575,888	328,174

Of the 13,797 volumes added to the Gore Hall collection, 7,061 came by purchase or exchange, 1,151 as the result of binding serial publications, and 836 by binding pamphlets separately, while the remainder, 4,749 volumes, were received by gift.

15,367 pamphlets have been received, 14,235 by gift, and 1,132 by purchase or exchange. 589 sheets of maps have been added to the map collection, which now numbers 19,668 sheets.

The number of volumes added to Gore Hall is less than in the two previous years, but exceeds the average of the ten years preceding (10,731) by about 3,000 volumes. In fact, the total number of volumes received by the Library in the last *three* years is only a little less than the total of the previous *five* years.

The total gifts to the College Library during the year 1900-01 and the previous five years have been as follows : —

GIFTS TO THE COLLEGE LIBRARY.	1895-96.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.
Volumes . . . . .	3,903	5,048	2,646	7,096	11,360	4,749
Pamphlets . . . . .	8,908	8,427	11,365	12,448	11,072	14,235
Totals . . . . .	12,811	13,475	14,011	19,544	22,432	18,984

The accessions by gift and purchase to the University Library as a whole (including, since 1890, the special reference libraries, or, as they have hitherto been called, the laboratory and class-room libraries) have been as follows during the last twenty-one years:—

	Volumes.		Volumes.		Volumes.
1880-81 . . .	9,804	1887-88 . . .	16,468	1894-95 . . .	16,892
1881-82 . . .	9,129	1888-89 . . .	12,253	1895-96 . . .	19,659
1882-83 . . .	9,818	1889-90 . . .	16,051	1896-97 . . .	16,371
1883-84 . . .	12,360	1890-91 . . .	16,477	1897-98 . . .	19,707
1884-85 . . .	14,558	1891-92 . . .	14,767	1898-99 . . .	25,414
1885-86 . . .	9,191	1892-93 . . .	23,282	1899-00 . . .	29,626
1886-87 . . .	11,924	1893-94 . . .	16,892	1900-01 . . .	24,288

It will be noticed that the number of volumes now in the College Library (387,097) is less than the corresponding number stated last year. It has been recognized for some time that the figures as given from year to year were in excess of the fact, but just how far the error had gone was not known until this autumn, when an actual count of the still unclassified portion of the Library was made. The older shelf-lists of the classified part were also recounted and corrected, and the true total thus ascertained. The previous figures were based on an estimate made in 1878, to which had been added from year to year since that time the total number of volumes received annually. But up to three years ago no allowance had been made, so far as I can learn, for the considerable number of duplicates rejected, sold, or exchanged, volumes worn out, and books transferred to other departments, so that it is not surprising that the total as reported grew to be more and more in excess of the actual number until an error of about 24,000 volumes had accumulated. The number as now given can be taken as a pretty close statement of the actual contents of the Library. The number of unbound pamphlets, likewise less than last year's statement, is an estimate based on the measurement in feet of the pamphlet files, and the supposed contents of pamphlet boxes on the shelves.

Among the gifts received during the year are the following: A bequest of \$10,000 under the will of Roger Wolcott, of the Class of 1870, late Governor of Massachusetts, to be added to his previous gift of \$10,000 establishing the J. Huntington Wolcott Fund for "the purchase of books of permanent value, the preference being given to works of history, political economy and sociology"; a gift of \$500 from the Saturday Club of Boston for the purchase of books; a gift of \$300 from J. Harvey Treat, Esq., of Lawrence, for the purchase of works relating to the catacombs and early Christian

antiquities ; a gift of \$500 from Mrs. Emil C. Hammer, of Boston, in continuation of an equal sum given the previous year, the whole amount of this later gift being available for books relating to Scandinavian literature and history ; gifts amounting to \$3,750 from Professor A. C. Coolidge, to pay for books bought at his desire relating to the history of Poland and other Slavic countries, and to the history of the Ottoman Empire, including over three hundred of the *Zeitung*en or contemporary accounts of the Turkish wars in the seventeenth century ; \$50 from Mr. Harold J. Coolidge, the first of five annual gifts of the same amount for the purchase of books on China ; \$300 received through Professor George P. Baker from nineteen subscribers, graduates of the College in classes from 1853 to 1900, toward the buying of an extraordinary collection of 219 contemporary engraved portraits of David Garrick costing about \$400, intended by the subscribers to be a memorial to the late librarian, Justin Winsor, whose manuscript unpublished life of Garrick remains in possession of the Library.

Professor Wiener spent a part of last summer in the Slavic parts of Southern Europe and visited in particular most of the towns where Slovak literature has flourished. He had the good fortune to secure the library of Lombardini of Sollein, a Slovak writer, who died in 1897. To this he added other Slovak publications as he found them in Turocz St. Martin, Pressburg, Tyrnau, and elsewhere, until he had finally formed a collection of 123 volumes and 1,567 pamphlets, including many rare periodicals, and much folklore material, a collection of this literature probably larger and more complete than any other in existence, except that owned by L. Rizner, a prominent Slovak bibliographer. The books came to the Library as the gift of Professor A. C. Coolidge.

Mrs. John E. Hudson, of Boston, presented to the Library over 300 volumes from the library of her husband, of the Class of 1862, and permitted us to pass on to the libraries of the Classical Department, of Radcliffe College, and of the Harvard Union, a large number of other volumes which were not needed on our shelves. From the library of Mr. Henry C. Warren, of the Class of 1879, who died January 3, 1899, the College Library has received 230 volumes and 116 pamphlets, and the Sanskrit library in Warren House has received about 225 volumes.

In my report last year I mentioned the acquisition of a set of the Oxford Newdigate prize poems, complete from 1822 to 1900 with one exception, the poem of R. C. Sewell in 1825, which I was led to believe had never been printed. It so happened that at the time this

collection came to us Mr. Robert Sewell, of London, the nephew of the prize winner, was visiting in Cambridge. The gap in our set was mentioned to him and he undertook to make enquiries on his return to England. His search was at first without result, for neither the poet's brother, the present Warden of New College, nor his sisters possessed copies or remembered seeing the poem in print; but his endeavors were at last rewarded by the discovery of a fresh uncut copy, which he has very kindly presented to this Library.

The money given by the Saturday Club has not yet been spent, but it will be used, at least in part, for the purchase of early editions of American authors, many of whom were once members of the Club. Gifts of this kind which can be used for some purpose lying a little outside the ordinary field of current expenditure to which the regular income of the Library has to be devoted, are very acceptable, and can always be employed to good advantage.

The Library Council was this year again able to make a special appropriation for "expensive books," for books, that is to say, too costly to be bought from the regular departmental appropriations without seriously abridging the power to satisfy the ordinary current demands. The more important works acquired in this way are the following:—the publications of the London Topographical Society, of the *École Supérieure des Lettres* of Algiers, of the *École des Langues Orientales Vivantes* of Paris, and of the Manchester Literary Club; also (to complete imperfect sets) publications of the *Accademia dei Lincei*, and of the Naples Academy, the *Fonti per la Storia d'Italia* of the Istituto Storico Italiano, and the *Documenti di Storia italiana* published by the Reale Deputazione sugli Studi di Storia Patria of Tuscany; portions of the *Miscellanea di Storia patria* published by the Lombard committee, and of the *Miscellanea di Storia veneta* of the Venetian committee, to complete the sets received in the Riant library; among long periodical or serial sets, the *Annals of the National Library of Rio de Janeiro* (21 vols.), the *Bibliothèque de Linguistique et d'Ethnographie américaines*, the *Collection linguistique américaine* (23 vols.), *Revue africaine*, 1856–1900 (44 vols.), *Zeitschrift für afrikanische und oceanische Sprachen*, 1895 to date, and *Vorontzof's Archives* (in Russian), 1870–95 (40 vols.); the orchestral scores of Wagner's *Tannhäuser* and *Fliegende Holländer*, Peñafiel's *Monumentos del Arte mexicano antiguo*; Moreau's *Collection Caranda*; Katona's *Historia critica Regum Hungariae*, 42 volumes, 1779–1817; an early edition (1532) of the romance of *Meliadus de Leonnoys*; and two Aldines, the *Plutarch* of 1509 and the *Pausanias* of 1516. We have also bought

a batch of letters, the correspondence of Sir Frederic Madden relating to the romance of Havelok the Dane (supplementing other portions of his correspondence and his papers concerning early English literature already in the possession of the Library, bound in twelve volumes); some letters from William Weeks, of the Class of 1775, while serving as paymaster in the Continental army, and a notebook of his brother, Clement Weeks, of 1772, containing interesting matter in regard to the College "rebellion" in 1766; one hundred and thirty-nine French plays (1785-1800) bound in twenty volumes; several collections of broadside ballads; the first volume of Claudin's sumptuous *Histoire de l'Imprimerie en France au XV<sup>e</sup> et du XVI<sup>e</sup> siècles*; the *Memoirs of the Geological Survey of Great Britain* (to complete our set); several early editions of Byron and Browning, and some fifty volumes of American literary annuals or gift books, many of which contain early and fugitive contributions from well-known authors. A special appropriation of the Council, made at the suggestion of Mr. Potter, provided for the purchase of many dictionaries and grammars of the less known languages, in which the Library was seriously deficient, and an appropriation for the same purpose will be continued another year. The library of the Museum of Comparative Zoölogy already has many books on Polynesian tongues incidental to its special collection relating to Polynesia, and these will, of course, not be duplicated.

#### COLLECTION OF COINS.

Dr. Malcolm Storer, the Curator of Coins and Medals, reports the addition to that collection of 138 pieces by gift and of 11 by purchase. For 77 of these the Library is indebted to Robert C. Winthrop, Esq., 1854. The special collection of medals struck in honor of Harvard men has been increased by medals of James Monroe, *h.* 1817; R. B. Hayes, *l.* 1845; Charles Sumner, 1830; Theodore Roosevelt, 1880; and the John D. Long, 1857, medal for debate, in gold, given by the founder, R. C. Surbridge, 1889.

#### SPECIAL REFERENCE LIBRARIES.

These libraries have been spoken of hitherto as Laboratory and Class-room libraries, but the second term, always of doubtful appropriateness, is no longer justified, since most of these collections, at first installed for convenience in or near class-rooms, have since been removed to other quarters. These libraries serve a number of different purposes; some provide simply a few manuals and peri-

odicals, such as laboratory workers find it necessary to have at hand ; others contain somewhat extensive collections for the use of advanced students, in some cases duplicating what is to be found in the main library, in other cases supplementing the Gore Hall collection ; others again provide many copies of books in much demand in the larger elementary courses in economics, history, etc. ; but all agree in being limited to a *special* field and in being administered as *reference* libraries, that is, in not allowing books to be taken out, — except that books may be borrowed over night from Harvard Hall.

The present extent of these libraries is as follows : —

SPECIAL REFERENCE LIBRARIES.	Perma- nent.	On Deposit.	Totals.
1. Chemical Lab. <i>Boylston Hall</i> . . . . .	541	1,053	1,594
2. Physical Lab. <i>Jefferson Phys. Lab.</i> . . . . .	28	367	395
3. Botanical Lab. <i>University Museum</i> . . . . .	585	124	709
4. Geological Lab. <i>Do.</i> . . . .	118	..	118
5. Mineralogical Lab. <i>Do.</i> . . . .	469	229	698
6. Phys. Geography Lab. <i>Do.</i> . . . .	347	176	523
7. Zoölogical Lab. <i>Do.</i> . . . .	266	..	266
8. Classics. <i>Harvard Hall 3</i> . . . . .	3,439	143	3,582
9. History. <i>Harvard Hall R. R.</i> . . . . .	2,143	17	2,160
10. United States History. <i>Harvard Hall R. R.</i> . . . . .	883	8	891
11. Political Economy. <i>Do.</i> . . . .	1,142	1	1,143
12. Social Questions. <i>Do.</i> . . . .	835	6	841
13. Child Memorial (English). <i>Warren House</i> . . . . .	4,087	90	4,127
14. Lowell Memorial (Romance). <i>Do.</i> . . . .	534	2	536
15. German. <i>Do.</i> . . . .	503	..	503
16. French. <i>Do.</i> . . . .	2,453	..	2,453
17. Sanskrit. <i>Do.</i> . . . .	893	13	906
18. Semitic. <i>Sever 7</i> . . . . .	1,102	..	1,102
19. Mathematics. <i>Sever 22</i> . . . . .	366	80	446
20. Mining and Metallurgy. <i>Rotch Laboratory</i> . . . . .	1	14	15
21. Engineering. <i>Pierce Hall</i> . . . . .	3,886	1,000	4,886
22. Music. <i>Holden Chapel</i> . . . . .	167	..	167
23. Philosophy (Psychol. Lab.). <i>Dane Hall</i> . . . . .	559	40	599
24. Fine Arts (incl. Gray and Randall Coll.). <i>Fogg Museum</i> . . . . .	808	..	808
25. Architecture. <i>Robinson Hall</i> . . . . .	259	..	259
26. Preachers' Library. <i>Wadsworth House</i> . . . . .	94	..	94
27. The Study. <i>Phillips Brooks House</i> . . . . .	59	..	59
Totals . . . . .	26,517	3,363	29,880

The four libraries of History, United States History, Political Economy, and Social Questions, brought together in the Harvard Hall

reading-room, now number over 5,000 volumes, and are of essential service to several of the large elementary courses, whose members have to read portions of a considerable number of standard authorities. For this use the Gore Hall Library, with its small number of duplicates, is altogether inadequate, and Harvard Hall is hard pressed, with its hundred seats, to accommodate the large numbers that depend upon it. Some larger room should be provided as soon as possible. Experience in this room and in Gore Hall shows that, while books as a whole may with great advantage to the student be kept on open shelves freely accessible to all, a fairer and more equal use is secured by taking the few books that are in special demand from week to week, and keeping them for a few days behind the counter, to be given out by the attendant on demand, for use in the room. The recorded use of the 928 volumes so reserved in the Harvard Hall reading-room in the course of the year amounted to 28,496. An extension of the method to a still larger number of books would have been desirable, but the limited space available behind the attendant's desk prevented. This room is not open in the evening, and books are accordingly loaned for over-night use at five o'clock. The number of these loans was 13,566. A record of but one volume missing at the end of the year bears witness to good management on one side and to a spirit of honesty and a willingness to comply with rules on the other.

The Lowell Memorial Library, owing to an unfortunate delay, does not yet include in its count of volumes the books from Mr. Lowell's own library, but the books are now entirely ready to be moved over, and the transfer will be made immediately. A handsome engraved book-plate has been designed for this library by Mr. B. G. Goodhue, at the expense of the Class of 1872.

The libraries in Warren House are intended for advanced students only and admission is by card. Cards were given in the course of the year to 280 students, and the privilege of access to these libraries was no doubt highly prized by these men; but the rooms might be used very much more than they are without diminishing the quiet and privacy which make them attractive.

The Engineering Library appears for the first time in the list of special reference libraries, having previously been included among the departmental libraries enumerated on page 200, but the present relations of the Scientific School and the College (both being under the one Faculty of Arts and Sciences), as well as the actual relations of the library to the College Library, make this the appropriate place in which to class it. The transfer of the books from Lawrence Hall

to their new rooms in Pierce Hall makes it impossible at the moment to state accurately either the relative number of "deposited" and "permanent" books or the total number of volumes in the library.

USE OF BOOKS IN THE COLLEGE LIBRARY.

The following table shows the use of books at Gore Hall in 1900-01 as compared with previous years:—

Use of Books.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.
1. Books lent (excluding over-night use.)	60,346	59,781	59,611	61,272	63,005	63,712	63,673
2. Used in the building (Recorded use only.)	23,500	22,230	22,965	27,017	25,595	23,715	24,180
3. Over-night use of reserved books . . .	20,985	8,594					
Totals . . . . .	104,831	90,605	82,576	88,289	88,600	87,427	87,853
4. Over-night use of Harvard Hall Reading-room . . . . .	. . . . .	. . . . .	9,288	11,938	12,046	13,460	13,566

Lending reserved books for over-night use ceased in 1896, when the reading-room began to be kept open through the evening.

Of the constant use of the reserved books in the reading-room, and of the collections of reference books, periodicals, and United States documents, freely accessible to all, no record is possible.

The extent of these open collections and their growth is shown in the following table:—

OPEN COLLECTIONS.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.
Bound Periodicals . . . . .	3,619	3,813	3,275	3,275	3,140
Reference Books . . . . .	3,822	3,853	4,142	4,224	4,235
Reserved Books . . . . .	8,090	8,117	8,344	10,134	10,557
U. S. Documents . . . . .	3,465	3,592	3,664	3,887	4,698
Total . . . . .	18,996	19,375	19,425	21,520	22,630

Complaints having been made that the reservation of books in the reading-room for the benefit of students occasionally interfered unnecessarily with the work of officers of the College who might have occasion to consult the books, and who could not do so conveniently at the Library, Mr. Briggs, the Superintendent of the reading-



room, sent out in January a circular from which I copy the following paragraphs:—

“In the case of all books reserved in the reading-room at the request of officers of the University, the Librarian wishes me to distinguish as far as possible between those which it is essential to have always at hand there, and those which the instructor desires his students to use, but does not consider of primary importance; to distinguish, that is to say, between books which the instructor requires his men to consult and which he in effect promises shall always be accessible to them in the reading-room, and those which are not so constantly in demand or so essential when they are wanted. It is proposed that books of the latter class may be borrowed for short periods by officers of the University (and by them only), if there does not seem to be a pressing demand for them at the time. It is also proposed to remove cause for complaint on this ground as far as possible by purchasing additional copies of books which are constantly wanted in the reading-room, and a special appropriation was made last year and has been repeated this year for the purchase of such duplicates.

“I enclose with this circular a number of blanks to be used in requesting to have books reserved. Please indicate by an asterisk those titles which you consider should always be accessible in the reading-room.

“I am directed by the Librarian to say that it is not the intention of the Library administration to change the present system of reserved books or to abridge the usefulness of the reading-room, but only to adjust our present system better to the convenience and necessities of officers of the University. To accomplish this I have to rely upon your coöperation in keeping me informed as promptly as possible in regard to the books which you wish to have reserved and in regard to the period for which they are needed.”

Instructors were, at the same time, asked to examine during the mid-year period and from time to time thereafter the books reserved at their request, with a view to returning to their places without delay those that were no longer needed. I think there has been no further cause of complaint on this ground.

The books shelved in the reading-room, together with those in the various special reference libraries in Harvard Hall, Warren House, and elsewhere, amount altogether to about 52,500 volumes to which direct access can be had by all students to whom they are of value. In addition, the 2,500 or more volumes in the library of the Harvard Union, a collection mainly of literature, biography, travel, and sport, with a good supply of reference books, is open to a large number of students.

During the year 26 volumes have disappeared from the shelves of the reading-room, a smaller number than usual, but large enough to

give constant cause for anxiety and watchfulness. The following notice, posted in the reading-room, attempts to express the purpose of the room and the spirit in which it should be used : —

“The books of the reference and reserved collections are placed on open shelves in the reading-room, that they may be *freely and equally* accessible to all readers.

“These books are on no account to be removed from the reading-room except by officers of the Library, and they must be used in a spirit of fairness and with a due regard for the rights of others.

“*A reader who fails to conform to these conditions is necessarily excluded from the Library. His name will be posted in the reading-room.*”

The great majority of the students willingly comply with these conditions and recognize the fact that rules for the use of the Library are made purely in their interest, but there are always some persons too thoughtless or selfish, and a very few so dishonest, that they are ready to abuse the privileges of a room so administered.

Cards of admission to different sections of the book-stack continue to be given, on recommendation of an instructor, to all advanced students who need to go directly to the shelves for purposes of investigation in connection with their work. Such students have the same facilities for the examination and study of all the resources of the Library, in their chosen departments, that the officers of instruction enjoy. The use of these cards of admission to the book-stack is shown in the following table : —

ADMISSION TO THE BOOK-STACK.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.
History . . . . .	68	63	66	54	51	78	112	81
Science . . . . .	27	9	4	11	33	43	30	36
Art and Archaeol. (including Music) . . . . .	8	5	11	18	34	38	33	33
Literature . . . . .	63	58	63	64	90	90	85	74
Classics . . . . .	45	44	41	41	52	60	70	58
Philosophy . . . . .	17	12	6	4	11	19	19	23
Theology . . . . .	3	3	1	1	3	5	1	1
Political Economy . . . . .	15	15	12	4	9	12	13	13
Education . . . . .	3	..	1	5	2	8	4	7
Geography . . . . .	..	..	..	8	14	2	3	9
Publ. of Learned Societies . . . . .	..	..	..	..	..	..	..	16
Total . . . . .	249	209	205	210	299	355	370	350
Times of use . . . . .	5,974	4,352	4,601	4,381	5,750	5,826	6,898	6,067

The number of individuals admitted was 257, not 350, because the same person often receives permission to use different parts of the book-stack.

The number of students who take books from the Library, and their relation to the whole number connected with the Cambridge departments of the University, is shown in the last three years and at previous ten-year intervals in the following table:—

STUDENTS OF	1874-75.		1884-85.		1894-95.		1898-99.		1899-00.		1900-01.	
	Whole No.	No. taking books.	Whole No.	No. taking books.	Whole No.	No. taking books.	Whole No.	No. taking books.	Whole No.	No. taking books.	Whole No.	No. taking books.
Divinity . . .	20	16	26	26	50	40	26	26	27	27	28	24
Law . . . .	139	68	153	122	404	176	551	302	613	241	647	246
Scientific .	29	21	28	21	308	144	415	273	495	218	507	234
Resident Grad.	55	18	70	52	242	204	308	267	313	289	327	294
Senior Class .	152	109	191	170	327	318	369	341	310	257	388	308
Junior Class .	159	96	234	216	348	335	335	309	392	311	380	302
Sophom. Class	208	124	256	220	425	323	508	446	508	380	536	424
Freshm. Class	197	108	255	205	399	236	471	381	498	308	537	364
Sp. Students .	. . . .	. . . .	. . . .	. . . .	168	127	168	143	194	145	151	112
<b>Total . . .</b>	<b>959</b>	<b>555</b>	<b>1213</b>	<b>1082</b>	<b>2671</b>	<b>1903</b>	<b>3151</b>	<b>2488</b>	<b>3350</b>	<b>2176</b>	<b>3501</b>	<b>2308</b>

These figures are subject to rather remarkable fluctuations from year to year for which it is difficult to assign a cause. The percentage of borrowers has varied within five years from 79 to 94 per cent. in the Senior Class, from 79 to 92 per cent. in the Junior, from 56 to 87 per cent. in the Sophomore, and from 56 to 80 per cent. in the Freshman Classes. These figures do not mean, however, that so large a number of students (482 out of 1,992 undergraduates in 1900-01, about 24 per cent.) made no use of the Library. Most of them, probably all, used the reading-rooms and special libraries; but it is to be regretted that so many should have been satisfied with this, and not have been tempted to extend their reading beyond the requirements of their College work. This is particularly true of the students in the Scientific School, only 45 per cent. of whom in each of the last two years have had occasion to borrow books from the College Library. These students have a reference library of technical books in their own building conveniently placed with respect to the laboratories and class-rooms in which most of their work is done; so that their daily required work does not bring them

to the general library. It would be interesting to know whether, if the technical books which they have to use were placed under the roof of the College Library and made equally accessible (though not so near at hand), the range and breadth of their reading would be increased, and to enquire whether, if this were the case, the more liberal culture and the broader outlook gained would improve or injure the character of their professional training. Students in other professional schools show the same tendency to neglect the opportunities which the College Library offers; but both Law and Medical students are older, and have already had the advantage of a period of more varied work in College. Divinity students, on the other hand, although they have at their own school a library which is far from being confined to a narrow field, seldom fail to make good use of the College Library as well.

The use of the Library by students of Radcliffe is shown in the following table. In our present building only very meagre opportunities for reading can be afforded to Radcliffe students, but a messenger comes to the Library daily to take to Radcliffe College books sent for by the students. Since the lending of reserved books ceased in 1896, and with the growth of Radcliffe's own library, borrowing from the College Library has naturally declined.

BOOKS LENT TO RADCLIFFE.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.
Borrowers . . . .	108	156	155	167	146	137	121	148
Books borrowed . .	1,162	1,672	1,502	1,820	1,191	1,273	1,125	952

In the course of the year the temporary use of the Library has been granted to 131 persons not connected with the University, who have come to Cambridge for purposes of study. As in other years frequent applications for the loan of books have been received from other libraries, especially college libraries, and from scholars in distant parts of the country, and the Library has sent away 744 volumes in response to these requests. This number is much larger than in any previous year, but no instance of loss or injury has occurred, and it is thought that the convenience of college officers and of other scholars in Cambridge has not been interfered with by the temporary withdrawal of these volumes.

The Sunday use of the reading-room is shown in the following table. The room is open, to readers only, every Sunday in term-time from one to half-past five in the afternoon.

SUNDAY USE.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.
Sundays open . . . . .	37	36	24	35	35	35	35	35
Users . . . . .	3,658	3,634	2,359	5,010	4,635	5,093	4,846	5,471
Average . . . . .	99	100	98	143	132	145	138	156
Highest No. . . . .	136	131	140	227	297	260	236	226

## SHELF DEPARTMENT.

Mr. Frank Carney, who has charge of the current work of the shelf department, reports 23,312 volumes permanently located in the stack during the year, 12,247 added to classes previously arranged, and 11,065 newly classified, making 282,997 volumes so placed of the entire Gore Hall collection.

The newly classified sections are the following:—

	Volumes.
Crusades . . . . .	857
Japanese and Corean history and literature . . . . .	395
Judeo-German (Yiddish) literature . . . . .	1,501
Landscape design . . . . .	150
Economics . . . . .	8,162
	11,065

The bringing together of the books on the Crusades was desirable on account of the receipt of many works on the subject in the Riant library; Japanese and Corean was taken up as supplementary to the Chinese collection arranged the year before; the Judeo-German collection is made up of the recent gifts of Professor Wiener and Messrs. Morris and James Loeb; the books on Landscape Design, relatively few in number, could easily be collected for the use of the newly established courses in this subject, while the receipt of many park reports made it desirable to be able to assign them permanent shelf-marks at once; the arrangement of Economics has been in progress nearly a year and is the last of the large subjects which can be taken up under our present conditions, unless temporary storage-room for books should be found in some other building.

The books grouped under Economics include, besides general and special treatises on economic theory, works on population, immigration, railroads, monopolies, money, finance, taxation, banking, land tenure, public lands, commerce; tariff, statistics, economic and industrial history, and insurance; the various social questions, labor, temperance, pauperism, crime, prisons, socialism, communism, marriage and divorce, woman suffrage, etc., having been already brought together under Sociology, while other subjects that will group

themselves about Political Science are still untouched. We were glad to comply with a request from the Library of Congress for a copy of the synopsis of our classification, with notes, under Economics and Sociology.

The new count made of the Library this fall shows that we still have about 100,000 volumes not yet included in the new classification. Of these, 55,000 volumes were received before 1877, and the rest in the course of the last twenty-five years. The subjects covered by these 100,000 volumes are theology, general and ecclesiastical history, political science, education, the history and literature of most Oriental countries, bibliography, law, medicine, and some minor subjects.

The recount makes it possible to give now with greater accuracy and detail the conspectus of the contents of the Library which was printed in my report two years ago.

*East Stack.*

<b>FIRST FLOOR.</b>	<b>Volumes.</b>
British documents, including Journals of the Lords and Commons, Parliamentary papers of the early part of the century, and the regular sessional papers from 1880 to the present time . . . . .	5,989
Canadian documents . . . . .	721
Chinese documents . . . . .	189
State and city documents of the United States . . . . .	3,653
General periodicals, English, French, and German . . . . .	<u>7,175</u>
	17,677
Pamphlets, estimated at . . . . .	215,000
<b>SECOND FLOOR.</b>	
Language . . . . .	10,378
Classical Philology . . . . .	5,033
Greek Authors . . . . .	8,711
Latin Authors . . . . .	6,753
Philological periodicals . . . . .	2,330
Harvard Collection (for general use) . . . . .	400
Cataloguers' reference books . . . . .	<u>4,429</u>
	38,029
<b>THIRD FLOOR.</b>	
American history . . . . .	30,446
American literature . . . . .	<u>6,353</u>
	36,799
<b>FOURTH FLOOR.</b>	
English history . . . . .	11,094
English literature . . . . .	17,731
Crusades . . . . .	<u>857</u>
	29,682

## FIFTH FLOOR.

French history . . . . .	9,122
French literature . . . . .	9,329
German history . . . . .	4,152
German literature . . . . .	5,939
Austrian history . . . . .	514
Dutch and Belgian collection . . . . .	1,027
	<hr/>
	30,083

## SIXTH FLOOR.

Slavic collection (history, literature, etc.) . . . . .	5,409
Modern Greek collection . . . . .	1,128
Italian collection . . . . .	9,476
Spanish collection . . . . .	2,967
Portuguese collection . . . . .	282
Minor Romance collection . . . . .	423
Scandinavian collection . . . . .	2,872
Judeo-German collection . . . . .	1,501
Turkey and the Eastern Question . . . . .	2,514
	<hr/>
	26,572

## STAIRWAYS AND PASSAGES.

Cyclopaedias . . . . .	985
Angling . . . . .	1,056
Carlyle bequest . . . . .	470
Atlases . . . . .	895
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	3,406
Maps . . . . .	19,668 sheets.

*West Stack.*

## FIRST FLOOR.

Harvard University collection (printed material relating to the history of the University, its departments and officers). Archives (or MS. material) not included . . . . .	3,503
Chinese history and literature . . . . .	506
Japanese history and literature . . . . .	395
Directories . . . . .	948
Registers . . . . .	907
Newspapers (including newspapers in East Stack and in Perkins Hall) . . . . . 1,392 bundles and	3,549
Unclassified books, — law, medicine, theology, ecclesiastical history, bibliography, Oriental history and literature, etc. — recent accessions (since 1877), 23,599; from the old library (before 1877), 52,940, altogether making . . . . .	76,539
	<hr/>
	86,347

## SECOND FLOOR.

Philosophy . . . . .	8,407
Sociology (including various "Social Questions") . . . . .	2,905
Economics . . . . .	9,860
Educational reports . . . . .	1,720

General science . . . . .	360
Anthropology . . . . .	208
Natural history . . . . .	1,087
Zoölogy . . . . .	2,113
Botany . . . . .	1,494
Physical Geography . . . . .	517
Geology . . . . .	1,383
Mathematics . . . . .	3,515
Astronomy . . . . .	1,329
Navigation . . . . .	369
Physics . . . . .	2,077
Chemistry . . . . .	1,984
Engineering . . . . .	1,573
War . . . . .	1,059
Unclassified books, accessions since 1877 . . . . .	11,631
	<hr/>
	53,491

## THIRD FLOOR.

Folklore . . . . .	8,690
Emblems . . . . .	209
Archaeology . . . . .	5,088
Fine Arts . . . . .	6,288
Landscape Design . . . . .	150
Music . . . . .	5,081
Learned societies . . . . .	6,109
Scientific periodicals . . . . .	9,151
Geographical periodicals . . . . .	1,571
	<hr/>
	42,232

*Reading-Room, Delivery-Room, etc.*

Reference books (not including those listed elsewhere) . .	2,560
Bound periodicals . . . . .	3,140
United States Documents (including Niles and the Cong. Record) . . . . .	4,698
In locked closets . . . . .	655
Sparks cases. 24 rolls and loose MSS. and . . . . .	343
	<hr/>
	11,396

Incidentally a number of minor improvements and readjustments in classification have been made. Austrian history and geography has been taken out from under German history, where it was at first placed as a matter of convenience, and is being arranged and renumbered by Mr. McDaniel as an independent group, a group presenting special difficulties to the classifier on account of the complexity of political and race divisions involved.

The distribution of the Riant books relating to European history and literature was the occasion of expansion and modification in Polish history, in Sigillography, which had not previously been included under Archaeology, where it seems to find an appropriate



place, and in our Tasso collection, to which the Riant library added some 148 numbers. The British "Rolls series" has also been re-arranged, placing the volumes in the numerical sequence commonly used by bibliographers, instead of in a subject order which was attempted at the beginning. The bound newspapers and newspaper bundles stored in the basement of Perkins Hall have been set in order, so that demands for special papers can be satisfied, the bundles of unbound papers in particular having never been arranged since they were moved to Perkins in 1896.

Besides the volumes separately classified and entered on the shelf-lists, 4,586 pamphlets have been distributed into boxes on the shelves, according to subjects, in accordance with the plan adopted two years ago, which has been found to work satisfactorily and to require a minimum amount of labor. Of these, only 477 have been fully catalogued; for 1,317 a single slip for the official catalogue has been written, and 2,792 have been put away without any catalogue entry being made or needed. The classification by subjects has been pretty close, and from time to time, as the boxes fill up, their contents will be further sifted and bound; but binding of this kind should not be done in a hurry, since the more miscellaneous the contents of a volume the less useful it is.

In May the Library Council was asked to authorize a transfer of books between the Library of the Museum and the College Library, so as to bring together in one place or the other the full strength of the geological collection belonging to the University, making one complete collection in one place and another subsidiary duplicate collection in the other. The principle was evidently a sound one. The transfer to the College Library of the great Whitney Library of geology or any considerable part of it being impossible on account of lack of shelf-room in the College Library, the only question for the Council to consider was whether it would approve sending to the Museum those books from the College collection of which that Library did not already possess duplicates; and this it agreed to do, making the collection at the Museum substantially complete. A comparison showed that there were about 1,450 volumes common to both collections. The remaining 480 volumes and 18 boxes of pamphlets in the College Library were in the course of the summer withdrawn from the College Library and deposited in the Museum library. Biographies and a few popular treatises, however, have been retained here in spite of their not being duplicated in the other library. Palaeontology and Mineralogy, though included here under Geology, have not been touched.

The annual examination of the shelves, made by comparing the shelf-lists with the books in place, was made in the summer and covered over 320,000 volumes. A more cursory examination is in progress systematically throughout the year and is intended to correct misplacements, discover books that should be repaired, etc. In the course of both examinations 398 volumes were found on wrong shelves and 1,523 out of order on their proper shelves. 116 books are reported missing, 26 from the Reading-room and Delivery-room, and 90 from the Book-stack, to which only officers of the University and advanced students are supposed to have access. An inspection of the list of titles, however, does not indicate any systematic or intentional dishonesty, and most of the losses, especially from the stack, are doubtless due to carelessness on the part of regular users, and some possibly to still undiscovered misplacements. Rather less than half of these books usually re-appear without explanation during the next year and occasional ones turn up after an absence of five or six years. Of the 1,519 volumes reported missing during the last nineteen years, 592 have been recovered.

#### CATALOGUE DEPARTMENT.

The work of the Catalogue Department as compared with previous years is roughly shown by the following table:—

CATALOGUE WORK.	1895-96.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.
Titles catalogued						
for College Library . .	7,564	8,990	9,974	12,276	12,738	24,169
for Departments, etc. .	2,668	2,320	3,026	2,087	2,378	3,861
Total . . . . .	10,232	11,310	13,000	14,363	15,116	27,530
Cards added to Catalogue .	27,428	21,282	25,093	22,995	26,055	30,808

The problem of the Catalogue Department has been to deal with the largely increased accessions of the last three years without making any substantial addition to its own force, an addition which is forbidden at once by lack of working space and by lack of means. Books cannot, however, be allowed to pile up unrecorded, but must be kept moving till they find at least a temporary abiding-place, and some record must be made of them, so that we may avoid buying duplicates, even if we are not able to make the books at once freely accessible through the public catalogue.

We have adopted such abbreviated methods of work for the large collections lately received and for the less important of the other

current accessions as shall secure a record sufficient temporarily for these purposes, and such as can be completed in a systematic manner when the opportunity comes to do final work on these books. The books not of immediate importance, especially gifts, are given a temporary running number by which they can be found, and which serves to keep them in order, and each has a single author card written in the simplest fashion for the official catalogue.

The Riant collection has been similarly treated, except that those books which belonged in divisions of the Library already classified have been introduced to their permanent places, while the rest wait in the order of the numbers given them in the printed Riant catalogue. A copy of this printed catalogue has been marked with the numbers assigned on our shelves, and author cards have been inserted in the official catalogue. We are thus protected from ordering duplicates, any volume can be found when specially enquired for (though not through the general public card catalogue), and the more important parts of the collection, those relating to the Crusades, the Turkish wars, and European history, are on the shelves with other books on the same subject. It is work of this kind that swells the count of titles catalogued in the total above, about 6,900 titles being for Riant books, over 3,900 for other books, and 1,158 for pamphlets sent to boxes. Part of this work was done and done satisfactorily by Price Greenleaf men detailed by the College Office; each man, however, gives but few hours a week, and the combined labors of four men working the greater part of the year only amounted, measured by time, to the labor of one person for six weeks.

Partial work of this kind is the best we can do under present conditions, but the longer it is continued the greater becomes the mass to be taken in hand and finished at some later time. At present the accumulation of this partially catalogued work includes: books not yet classified but given a temporary running number, 3,260 titles; Riant books, some classified, others in a group by themselves, 7,579 titles; other books classified, but not yet fully catalogued, 1,474 titles; pamphlets in boxes classified by subjects, and scientific dissertations sent to the Medical School and other departments, recorded on official catalogue only, about 12,000 titles; total, about 24,000 titles. In addition to these should be mentioned some 1,500 volumes of pamphlets bound some years ago, very few of which have ever been taken up since binding, though many of the pamphlets in these volumes came from the old files of catalogued pamphlets, and in their old place could be easily found when asked for, but are now nearly inaccessible on account of the shelf-marks never having been added

on the catalogue cards. I do not see any prospect of being able to take up any of this work at present, except perhaps a few volumes of these bound pamphlets from time to time by means of extra help employed in the summer.

We should probably not have come out as well as we did this year in getting these arrears of work into orderly shape, if it had not been for my own absence on leave for four months during the winter. This released a certain sum of money and made it possible to employ some extra assistance beyond what was planned in the estimates for the year. Mr. Tillinghast observes in his report on the Cataloguing Department that, without exceeding the estimates, "more assistance of this class might have been utilized, but the employment of extra help is limited by lack of room and even more by the difficulty of preventing it from interfering with the regular work."

The work accomplished by means of this extra assistance included the arrangement of the collection of Judeo-German literature (1,501 numbers) given by Professor Wiener and Messrs. Morris and James Loeb; the writing of cards for the official catalogue (further cataloguing being postponed) for a large part of our collection of Proverbs and Emblems received by gift from Mr. John Bartlett some years ago, for Sanskrit and other Oriental works received in the bequest of Fitzedward Hall, '46, for the collection relating to the Jansenists in Utrecht bought two years before, and for many current accessions and exchanges; the cataloguing, either completely or partially, of some 440 uncatalogued volumes all belonging to the Library before the present public catalogue was begun and some even going back to before the fire of 1764 (these had been overlooked in the general recataloguing, but have been discovered by the reclassification now in progress); the cataloguing of a number of Russian and Bulgarian books by Miss Sanders, who has helped us before; the transfer to the public catalogue of many of the printed cards for articles in periodicals and society publications received during the last two years; the renewing of guide-blocks in the catalogue drawers; and many other things which had unavoidably fallen behind.

The coöperative cataloguing of articles in current periodicals and in the transactions of learned societies, in which the Library has been engaged for three years and a half, has gone steadily forward and begins to show interesting results. During this period the Library has contributed to the central bureau, the Publishing Board of the American Library Association, the manuscript or "copy" for 2,074 titles taken from the publications assigned us for analysing, and it

has received in return printed cards (four copies for each title) for these 2,074 titles and for 8,474 titles in addition, which had been catalogued by the other four coöperating libraries, making 10,548 titles in all. For these we paid at the rate of 3.3 cents per title, or \$348.08; but a rebate of 10 cents for each title catalogued by us, or of \$207.40, made our net payments \$140.68. The cost to us of the cataloguing is about 15 cents a title, or \$311.10 for the 2,074 titles, and the cost of sorting out and classifying the new titles received comes to about 5 cents apiece. If all the titles were of use to us, and were inserted in our catalogue, the total cost of the 10,548 titles would be:—

Cataloguing 2,074 titles . . . . .		\$311.10
Printed cards for 10,548 titles . . . . .	\$348.08	
Less rebate of . . . . .	207.40	140.68
Sorting and classifying 8,474 titles . . . . .		<u>423.70</u>
Total . . . . .		\$875.48

or an average of 8.3 cents per title for cataloguing and printing, which, compared with the 22 cents per title which we are now paying to the College printer for printing alone, to which must be added the cost of cataloguing and the cost of card stock, shows very plainly the advantage to be had from coöperative work.

As a matter of fact we do not use all the titles received; a few are taken from publications to which we do not subscribe, some we do not consider of sufficient importance for permanent preservation in the public catalogue, but these we are glad to put on file by themselves for at least temporary reference. Moreover, we have enough cards left over to send to the departmental libraries all titles of interest to each library, and to supply some of the professors with titles relating to their specialties.

The advantage to be gained from any scheme for the coöperative cataloguing of *books* is probably less, and the difficulty of so adjusting it as to give satisfactory results is much greater, but the above figures seem to me most encouraging. It should be remembered also that the cost of cataloguing books is necessarily greater than that of cataloguing periodical titles and that the titles themselves are longer, which increases the cost of composition, so that the actual difference in expense between individual and coöperative work would be less than that indicated above.

Plans for such coöperative cataloguing have been under active discussion for some time by the Publishing Board of the American Library Association and have several times seemed on the point of bearing fruit. At present it is likely that the Library of Congress

will be able to undertake as part of its regular functions a large part of the work which the Publishing Board has been interested in, and that Board will naturally take no further action until it is evident how far this can be carried.

The Library of Congress receives all books that are copyrighted in this country; it is also buying much more extensively than ever before, and is attempting to round itself out on every side. All its accessions it catalogues by means of printed cards, having on its own premises a division of the Public Printer's office. It has also begun to recatalogue its whole collection, and this too is done on printed cards. All of these cards it now offers for sale to other libraries under the provisions of the act which allows public documents to be sold at cost plus ten per cent. The price, which has to cover the cost of handling, has been fixed for the present at two cents for the first card and half a cent for each duplicate card for the same title. The actual distribution of cards has not yet begun, so that it is too soon to venture an opinion as to how much will be accomplished. Cards for current copyrighted books a library can order and may be sure of receiving; cards for other books it may order, but cannot tell beforehand whether they will be supplied; and the success of the plan will depend largely upon how promptly cards can be sent in response to orders, and how promptly libraries can be notified whether or not they will receive cards for non-copyrighted books. The saving of expense over private printing makes it wise for libraries that have hitherto printed their own cards to adapt their methods, if possible, even to what would otherwise be considered an annoying delay, but if prompt service can be maintained, the offer of the Librarian of Congress should be responded to by thousands of libraries, and should result in a great economy and a great improvement in cataloguing throughout the country. Our own library may confidently expect some measure of relief from this plan;—a saving in expense in printing and an increased output of work should result in proportion as we are able to use the cards printed by the Library of Congress.

It seems likely, nevertheless, that there will remain a considerable proportion of our current work that will not be affected, and I still hope to see some coöperative scheme inaugurated by four or five college or reference libraries working together that will still further diminish the present expense of printing.

Although the reiteration of our present difficulties is tiresome, I must quote from Mr. Tillinghast's report what he has to say on the subject: "The conditions under which we work are bad and grow continually worse; we have not sufficient space in which to handle

the books properly; at the desk where the book-plates are put in, at the shelf department desk in the east stack, and at the place where the shelf-list work must be done in the west stack, and at the cataloguers' desks books are crowded together in such a manner that injury to bindings, to unbound books and to loose plates can scarcely be prevented, while the same crowding delays the work at every step, wearies the workers, and is continually resulting in the temporary misplacement of books that are particularly wanted. It is often necessary on the arrival of a box to place the books, while waiting for classification and for cataloguing, on various shelves here and there in the stack. When a book is asked for, it has to be looked for in all these places, and the chances of overlooking it, and the chances of losing memory of books so scattered, when there is time to take them up, are great, even though care is taken to keep records of all such colonies of books."

ORDERING DEPARTMENT AND FINANCIAL CONDITION.

The following table shows the income of our book-funds, receipts from other sources for the purchase of books, and expenditure for books during the last six years.

INCOME AND EXPENDITURE.	1896-96.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.
<b>From book funds, —</b>						
Balance from previous year	\$4,181	\$2,864	\$2,303	\$737	\$5,028	\$5,176
Income of the year . . . .	15,189	13,991	13,010	18,301	18,510	19,279
<b>Total available . . . .</b>	<b>19,320</b>	<b>16,855</b>	<b>15,313</b>	<b>19,038</b>	<b>23,538</b>	<b>24,455</b>
Spent for books . . . .	16,456	14,552	14,576	14,010	18,862	19,927
<b>Balance to next year . . .</b>	<b>2,864</b>	<b>2,303</b>	<b>737</b>	<b>5,028</b>	<b>5,176</b>	<b>4,528</b>
<b>Special gifts, sales, etc. —</b>						
Balance from previous year	1,396	1,205	1,176	839	2,940	936
Received during the year .	2,958	349	506	3,906	5,137	6,115
<b>Total available . . . .</b>	<b>4,354</b>	<b>1,554</b>	<b>1,682</b>	<b>4,745</b>	<b>8,077</b>	<b>7,051</b>
Spent for books . . . .	3,149	878	843	1,805	7,141	5,100
<b>Balance to next year . . .</b>	<b>1,205</b>	<b>1,176</b>	<b>839</b>	<b>2,940</b>	<b>936</b>	<b>1,951</b>
<b>Total spent for books, —</b>						
College Library . . . . .	\$19,605	\$14,930	\$15,419	\$15,815	\$25,503	\$25,027
Department Libraries* . . .	5,184	4,070	5,322	3,869	4,748	4,484
<b>Total . . . . .</b>	<b>\$24,789</b>	<b>\$19,000</b>	<b>\$20,741</b>	<b>\$19,684</b>	<b>\$30,251</b>	<b>\$29,511</b>

\* Not including the Law School, which spends from \$3,600 to \$11,000 a year for books, but does not order through the College Library.

The work of the Ordering Department, in charge of Mr. Potter, is summed up in the following table:—

WORK OF ORDERING DEPARTMENT.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.
New orders, —					
Total received and examined . . .	4,152	6,687	7,049	13,001	10,021
Already owned or ordered . . . . .	964	1,383	1,712*	3,205	2,596
Forwarded . . . . .	3,016	3,746	5,010	9,612	6,782
Estimate of cost, —					
For the College Library . . . . .	\$5,970	\$6,765	\$9,510	\$19,355	\$14,759
For Departments . . . . .	3,245	3,806	1,942	3,066	2,510
Total estimated cost . . . . .	9,215	10,071	11,452	22,321	17,269
Shipments received from abroad . . .	22	31	39	44	52
*No. of vols. bought for College Lib. .	3,531	4,385	6,045	6,774	7,061
†Total gifts examined and passed on .	13,475	14,011	19,544	22,482	18,984

Under "new orders" are included both books bought with Library funds and books paid for by gifts, such as the Hammer gift and the Coolidge and Treat gifts, since the labor and responsibility of forwarding these orders falls to the Ordering Department.

The work of the year was naturally less than that of 1899-1900, which was an exceptional year on account of the receipt of the large Riant library, but an examination of the table shows that there has been a constant increase in recent years and that the work of the year 1900-01 was in every respect, in the number of orders handed in, the number of orders forwarded, the estimated cost of purchases, the frequency of receipt of foreign shipments, and the number of volumes actually bought, twice or more than twice as great as in the year 1896-97, four years earlier. In regard to this Mr. Potter says in his report: "The great increase of work is indicated in the above tables; yet the staff remains the same as years ago when the work was not only less in quantity but easier in quality,—for as the Library grows larger we not only have more difficult orders to handle, but the task of searching in the catalogues becomes more arduous. That the present staff cannot keep up properly with the work was but too plainly demonstrated at various times last winter. Much of Mr. Tufts's time is now occupied not only with the care of the Map Collection but with work on the Harvard University Collection as well, and unless he is relieved of this it will be less and less possible to

\* Excluding volumes formed by binding periodicals and pamphlets.

† Including both volumes and pamphlets. See p. 195.



count on his aid in looking up orders, etc. With an additional assistant of good intelligence, I should hope not only to accomplish the work without the present delay, but to rearrange the details of it in such a way that I could myself find more time for examining book-lists, both new and old, and in general keeping a wider oversight over the growth of the Library. More should be done in the way of bringing promptly to the attention of professors the titles of new books just published and of old books offered in second-hand lists. In many subjects the Library is weak, yet they are not built up because no one has the time to do it. Such a strengthening and reorganizing of the department as I have in mind would, by relieving me of certain details, give me the time needed for such matters."

Mr. Potter's last report called attention to various points at which the Library needed strengthening, and asked for a special appropriation to be expended on some one of these points. An appropriation of \$100 was granted and was used for the purchase of grammars and dictionaries of the less known languages. A further appropriation of the same amount will be devoted to the same purpose, as many gaps still remain to be filled. In addition to this Mr. Potter reports that he has lately "made special effort to increase our strength in certain directions by each year keeping a special lookout in second-hand catalogues for books on particular subjects. In this way our collections on Ossian and Chatterton have been very materially increased and at very small expense. During the past year we have picked up many early editions of Byron and of Browning. We have also lately added many works on the history of printing."

The Library's foreign agents for the supply of books remain the same as last year, except that our Scandinavian business has been transferred to the Skandinavisk Antiquariat at Copenhagen. Our other agents are Kegan Paul, Trench, Trübner & Co., E. G. Allen & Murray (for periodicals), and Maggs Bros. (for out-of-print books), in London; Schleicher Frères, in Paris (whose foreign order business has lately been made over to Ch. Gaulon et Fils); Otto Harrassowitz, in Leipzig; Brockhaus, in Leipzig; and Bernardo Seeber, in Florence; occasional orders being sent to other booksellers. All of them fill orders for out-of-print books more expeditiously and certainly than American booksellers are able to do. In regard to the difficulty of obtaining such books in this country Mr. Potter says: "I know of no bookseller in this country who can be depended upon to hunt up scarce books with anything like the energy that the European dealers show in this important part of their work. I shall not attempt to say whether this is due to a lack of organization in the

trade or to a national disinclination to bother with small matters. (I am speaking of books that are rare, not in the sense that they command a high price, but that are merely out of print and hard to find.) There are now on our lists at least a hundred such books, and the search for them seems almost hopeless. Advertising in the Publishers' Weekly does not seem to be of much use. Nor have we as yet had much success from a plan of sending a type-written list of desiderata to different booksellers; but I shall continue this plan in default of better means. The only other way of finding these books is the chance of running across them in second-hand catalogues. We have during this year bought much less than usual from American auction sales; this partly because I have not had time to examine the catalogues carefully, and partly because, owing to the high prices brought about by better times, we have lost a large proportion of the books bid on."

#### THE ARCHIVES AND THE HARVARD COLLECTION.

In June the Library lost the services of Mr. William Garrott Brown, who since 1893 had been in charge of the Archives, with the title since 1896 of Deputy Keeper of University Records, and who now retires in order to devote himself to literary work. In the eight years during which Mr. Brown has been in charge the collection of printed matter relating to the history of the University, its officers and graduates, has increased greatly in size and value. Mr. Brown was charged with gathering in from many different quarters everything that can illustrate the present or the past life of the College. A circular which we have been in the habit of sending to persons likely to be able to contribute desirable material states the object of the collection:—

"The Librarian desires to obtain for the special collection relating to Harvard University in the College Library everything that illustrates in any way the current life of the College. To this end the coöperation of the students in general and in particular that of officers of College Societies, Classes, Papers, etc., is asked.

"Copies of programmes, posters, tickets, bills of fare at society or class dinners, circulars, pamphlets, photographs, clippings, badges, medals and anything that bears upon the student life of the present or the past will be welcome.

"A collection of this kind can only be made through the goodwill and painstaking of many individuals, each contributing what comes in his way."

Much of the material received in response to this circular, or from the College Printing-office, is of a fugitive nature, and to

ensure preservation needs to be mounted or otherwise especially cared for. Much of this work has been done, but much still remains, for over 4,000 items are sometimes received in the course of a single year, and the whole of one person's time could well be spent upon it. Since Mr. Brown's departure Mr. P. H. Tufts, of the Library staff, who had already made himself familiar with the collection, has been in temporary charge.

The Archives, or collection of manuscript records and papers, increases much less rapidly in extent, but is naturally of still greater value. Mr. Brown's familiarity with its contents brought his services often into request by officers of the University and historical students in search of information.

Satisfactory work cannot again be taken up on these two collections until they are placed in suitable quarters. At present all work devoted to them has to be done under such drawbacks as to light, air, and convenient access, that it should be reduced to its lowest limit consistent with preserving their completeness and preventing their falling into disorder.

WILLIAM COOLIDGE LANE,  
*Librarian.*

## THE GRAY HERBARIUM.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—No change has been made in the regular staff of the Gray Herbarium during the past academic year. It has been found desirable, however, to secure the services of temporary assistants, as follows: Mr. Carleton E. Preston was employed for three months to aid in the sorting and distribution of newly acquired material; Mr. J. M. Greenman was commissioned during July and August to make for the Gray Herbarium sketches, tracings, and notes upon certain types of tropical American plants preserved in the Royal Botanical Museum at Berlin; Mr. R. G. Leavitt has been employed to revise Dr. Gray's *Lessons in Botany*. This valuable work was first published in 1836, and with several revisions by its author has had a period of usefulness scarcely exceeded by any other American textbook. During the time which has passed since the last revision important changes have been introduced in the methods of presenting elementary botany. Somewhat less attention is being paid to exterior form, morphology, and classification, and far more to the vital aspects of plant life, to vegetable physiology, and ecology. For this reason a general revision of the *Lessons* has seemed desirable. Many parts have been rewritten, new and excellent illustrations, drawn by Messrs. C. E. Faxon and F. Schuyler Mathews, have been added, and the descriptive text amplified by directions for numerous experiments and laboratory exercises. The revised book under the title of *Outlines of Botany* is nearly through the press, and will, it is confidently believed, prove a valuable addition to the series of botanical textbooks owned by the Gray Herbarium.

Mr. C. G. Pringle, collector for the Herbarium, has made another journey to Mexico, where, notwithstanding great difficulties, due to the illness of his assistants and to extreme drought in some of the regions explored, he has again secured extensive and valuable collections, including many plants new to science.

In order to accumulate material for exchanges with foreign herbaria, the staff has during the past summer made a special effort to secure for distribution a large number of specimens of recently distinguished species, extra-limital plants, and noteworthy forms

belonging to difficult and imperfectly understood groups. To this end more than 7000 specimens have been collected, representing about 60 species of unusual interest. This work will be continued in coming seasons, and a series of *exsiccatae* issued in "centuries" in the manner now followed by several foreign herbaria.

During the year important monographic work has been done, upon material loaned from the Gray Herbarium, in the *Myrsinaceae* (736 sheets of specimens) by Prof. Carl Mez of the University of Halle, and in the genus *Senecio* (1109 sheets) by Dr. J. M. Greenman at the University of Berlin.

Of the tropical collections recently determined at the Gray Herbarium the most noteworthy is a series of nearly a thousand specimens, secured on the Galapagos and Cocos Islands by Messrs. R. E. Snodgrass and E. Heller of the Hopkins-Stanford Exploring Expedition. These plants were sent to the Herbarium by the Zoölogical Department of Leland Stanford Jr. University, and represent such a large proportion of the known vegetation of those islands, that it has seemed best in lieu of a report upon them to prepare general revisions (together with the history, synonymy and bibliography) of the floras of the Galapagos and Cocos Islands. These catalogues, including not only many species hitherto unrecorded upon the islands, but much tabular matter to show the distribution of the plants and complicated relations between the florulae of the different islands, are nearly ready for press.

The number of specimens received by the Gray Herbarium from all sources during the year was 16,799. The number of new sheets of mounted specimens incorporated in the organized collection was 14,002. The accessions to the Library have amounted to 154 volumes and 339 pamphlets. Miss Mary A. Day, the librarian of the Gray Herbarium, has in advanced preparation a bibliography of North American local floras, a detailed catalogue, arranged upon the plan of her recently published "Local floras of New England."

The endowment of the Gray Herbarium, although considerably increased in recent years, yields an income as yet inadequate to the needs of the establishment. It is thus necessary from year to year to cover a considerable part of the current expenses by gifts for present use. In February the members of the Visiting Committee, to whose fidelity and interest the Gray Herbarium has for many years been greatly indebted, issued a circular describing the nature of the scientific work done at the Herbarium and stating its pecuniary needs. Prompt response was received from no less than 150 contributors, and the sum thus obtained was substantially augmented by

the personal contributions of the Committee. In this way it was possible fully to cover the expenses of the past academic year.

During the year the staff has published 21 papers and botanical articles. Of these the more important are as follows: —

The representatives of *Scirpus maritimus* in America; by M. L. FERNALD, *Rhodora*, ii, 239-241.

The northeastern *Carices* of the subsection *Vesicariae*; by M. L. FERNALD, *Rhodora*, iii, 43-56.

The herbaria of New England; by M. A. DAY, *Rhodora*, iii, 67-71, 206-208, 219-222.

Contributions from the Gray Herbarium, n. s., No. xx; by B. L. ROBINSON, *Proc. Am. Acad.* xxxvi, 455-488; including I. Synopsis of the genus *Melampodium*; II. Synopsis of the genus *Nocca*; III. New species and newly noted synonymy among the Spermatophytes of Mexico and Central America.

Contributions from the Gray Herbarium, n. s., No. xxi; by M. L. FERNALD, *Proc. Am. Acad.* xxxvi, 491-506; Some new Spermatophytes from Mexico and Central America.

The vascular plants of Mount Katahdin; by M. L. FERNALD, *Rhodora*, iii, 166-177, t. 32.

B. L. ROBINSON, *Curator*.

## THE BOTANIC GARDEN.

TO THE PRESIDENT OF THE UNIVERSITY :—

SIR,—As Director of the Botanic Garden, I have the honor of presenting the annual report for the academic year 1900–01.

During the whole year the management of the Garden and its finances has been under the charge of the Assistant Director, Mr. Oakes Ames, and the improvements of which I am about to speak are due to his judicious care. Some of these improvements have been undertaken by him at considerable cost, in the hope of ultimate reduction of the running expenses of the Garden.

While abroad this year the Director received from one friend of the Garden a draft to be expended in the purchase of desirable specimens for the Garden and Museum, and from another friend a draft to provide for the further equipment of the Memorial Greenhouse. And, since his return, he has also had the great pleasure of receiving from Mr. H. H. Hunnewell a gift of twelve thousand dollars to extinguish the debt incurred in the assignment to the Botanical Department of a portion of the Mineralogical Section of the University Museum. These gifts may be taken as an indication that the Botanic Garden and Botanical Museum interest some persons as useful factors in the work of the University. It would seem as if the ordinary annual expenses of these two establishments ought to be met by the assured income of a larger fund than they now possess. At some time in the near future the Department will be obliged to bring this subject before the friends of the University.

Mr. Cameron, the Head-Gardener, makes the following statement relative to the out-of-door garden :—

The most important work done during the fall was to give all the beds below the terrace a liberal supply of well-rotted stable manure. The good effect of this work could be seen in the increased vigor and showiness of the plants in the summer.

The winter was comparatively mild ; but the spring was exceptionally late and cold. The summer weather was very favorable for plant growth. We had during the hot months many well distributed rainfalls.

During the year very few of the plants have been lost, and at the present time all are in good condition.

The Garden has been changed a good deal in its general appearance by the removal of some of the duplicate large trees on the east side, whereby we have now the advantage of greater light. The lawns which were thus opened have been planted with a selection of bulbous plants.

Mr. Ames has replaced one of the smaller boilers in our battery by a larger one, and we can now heat even the farthest greenhouse as well as could be wished. The consumption of coal has not been much increased.

We feel more and more the need of an adequate Palm-house. The central building, in which our fine palms are growing at present, is too crowded for vigorous growth and proper display of these plants. When the wished-for Palm-house is presented to the Garden, it will naturally be placed at the end of the present range, and the central house now used for palms would be utilized for water-plants, such as water-lilies and the like, for which it is well fitted. We could even cultivate *Victoria Regia* there.

Our collection of Cactaceae has been considerably increased by purchase. The new method of planting them out, conservatory-fashion, has proved to be successful from every point of view. For the purpose of clearing up some doubtful points in connection with the morphology and ecology of Cactaceae and other desert plants, it was decided to offer to Mr. Carleton E. Preston a scholarship sufficient to defray his expenses during a protracted stay in the drier portions of Arizona. Some of Mr. Preston's results have been published; others are nearly ready.

Interest in the new memorial greenhouses and laboratory continues to increase. The new fixtures and equipment have enabled Dr. True and his advanced pupils to carry on researches which, it is understood, are nearly ready for publication. Iron tables and electric fittings are among the most recent additions. The latest acquisitions are the following: a dynamo and motor for the reduction to 110 voltage of the 500 volt current supplied by the Cambridge Electric Light Company, thus affording facilities for the continuance of observations in regard to certain effects of electricity and of magnetism on plants. The Department is under great obligations to Professor Trowbridge for much aid in planning the apparatus. All of these new appliances are provided for by the generous gifts of the donor of the houses. He is making it his care that the houses and laboratory shall not stand in want of any reasonable addition to their outfit.

From previous reports it will be remembered that we have a laboratory for morphological study in the long brick range connected with



the Garden lecture-room. Changes have been made in this laboratory to adapt it better to the needs of the Summer School. During the past summer there were two courses in Botany given in this laboratory, under charge of Mr. Olive. The instructor sends the following memorandum:—

Course I was modeled after Botany 1, and was taken by eighteen students, of which number twelve were men and six were women. Approximately 90 hours were spent in laboratory work and 30 hours in lectures; whereas in the college course, of which this is the equivalent, approximately 55 hours of laboratory work are required, together with 28 hours of lectures. More work was really accomplished, therefore, during the concentrated laboratory period of the Summer School than during the second semester of the college year. The illustrations utilized by Botany 1 were supplemented by many others, some work with the compound microscope was introduced, and field work, a feature not practicable for the spring class, was made an important feature of the summer course.

Course II in the Summer School was planned to fulfil to a certain extent the wishes of those teachers who advocate the study of types by the more advanced students. Nine students, four of whom were men and five women, all but one teachers, took Course II. All had had good preparation in Botany.

Of the twenty-seven students attending the summer courses sixteen were teachers and nine were Harvard students.

For some years the Assistant Director has maintained, at his home in North Easton, a laboratory for the investigation of certain problems in Morphology and Vegetable Physiology. Connected with the laboratory is a range of greenhouses which afford abundant material for the prosecution of this class of studies, especially in hybridization. Mr. Ames proposes to place this laboratory and its equipment, its greenhouses, and the extensive library, at the service of the University for the coming two years, for such advanced students as may be selected for this work by the department of Phanerogamic Botany. In the collection available for histological and morphological, as well as for physiological studies, the orchids alone number about 200 genera, 2000 species, and 600 hybrids. It is doubtful if a more favorable opportunity for the conducting of such investigations can be found anywhere. The Director recommends that this generous offer be accepted and utilized immediately.

As stated in previous reports, an attempt has been made to establish, on a small scale, an experimental garden in Cuba. Mr. E. F. Atkins, of Boston, has provided land, local labor, and sufficient funds for the preliminary work. The early experiments are confined to eight of the more important cultivated tropical species, chiefly

with a view of improving the varieties now available to the cultivators in the island. Mr. R. M. Grey, well known for his success in hybridizing plants, is in charge of the place, and he reports favorably as to the outlook. He has with him Mr. Bohnhof, who has had good training preparatory to such investigations. It is very pleasant to note that the enterprise has received from numerous gardens and experiment stations in the tropics, encouraging assistance in many ways.

The Cryptogamic Laboratories and Herbarium occupy the whole of the fifth floor of the Botanical Section of the University Museum. The Laboratories, under the charge of Professor Thaxter, have been active in instruction and investigation. Professor Farlow communicates the following memorandum regarding the Herbarium:—

The Director of the Cryptogamic Herbarium has made an effort during the year to arrange the different orders of cryptogams so that they may be more easily consulted by specialists, and particular attention has been paid to the extensive collection of mosses and hepatics, formerly deposited in the Gray Herbarium and removed to the Museum in 1899. The valuable Sullivant and James collections are now in part arranged, and many packages containing important collections, which had not been opened since the death of Mr. Sullivant, more than twenty-five years ago, have been inserted in their proper place, so that the collection is rich in exotic as well as in American species. The Herbarium was so fortunate as to be able to secure the services of Mr. J. F. Collins, of the Botanical Department of Brown University, during a part of the year, and to his careful management of the work the Herbarium is much indebted.

The Phanerogamic Laboratories at the Museum have had the usual number of students in the different classes. No suggestions need be made at present for any changes in the rooms or equipment.

When the Ware collection of Blaschka glass models of plants and flowers was begun in 1886, a plan was made for representing ultimately all of the important natural orders and genera of our American plants. We now have nearly enough complete specimens to cover every large natural group of flowering plants, and it is understood that Miss Ware has perfected arrangements for continuing this artistic work in order to fill the gaps. Since his father's death, Mr. Rudolph Blaschka carries on his studies without any assistance whatever, and every detail of artistic and mechanical construction is in his hands alone. Some of his latest creations, notably the models of *Solidago*, have consumed a far greater amount of time than any of his previous models, but even a casual inspection shows that the amount of detail in these later specimens is much greater than in

any he has made before. The results of the activity of these artists comprise up to date about seven hundred complete models of entire plants and nearly three thousand analytical details.

The laborious task of transferring the larger models to plaster of Paris supports is going steadily on. In the revision of the labelling we have been so fortunate as to secure the services of Dr. J. M. Greenman. The nomenclature of the entire collection will be brought into conformity with that employed at the Garden and the Gray Herbarium.

The very large collection of specimens illustrating the more useful products of economic plants grows in size and utility every year. It is now in a condition to be consulted by specialists in all departments of Economic Botany, and it is placed freely at the disposal of students properly qualified. The friendly relations which exist between this establishment and kindred museums justify the hope that our collections will continue to increase rapidly and symmetrically. The illustrated catalogue of economic plants and products, on which the writer has been engaged for a long time, will probably be completed within the next four years.

Concerning our collection of fossil plants, Professor Jackson sends the following communication : —

During the year, in what time he had available, Dr. Robert T. Jackson labelled the cretaceous plants from the Laramie Group of Golden, Colorado, and the Dakota Group of Kansas. Especial attention was paid to seeking out and labelling types, of which there are many in this group. A beginning was also made in the labelling of the Carboniferous collection, this being done from the Lesquereux Catalogue, which gives both the identification and locality of the specimens.

The Overseers' Committee on the Botanic Garden has lost two of its members during the past academic year. Mr. Augustus Lowell was a member of the Committee from its organization in 1886, and was very constant in his attendance upon its meetings. He had a well-marked taste for Botany and Horticulture, and a wide acquaintance with these subjects ; so that his counsel was always judicious. He did much toward shaping the policy of the Garden and contributed in many ways to its advancement. Mr. George A. Nickerson became a member of the Committee in 1892, and attended all of its sessions when his health permitted. He had manifested of late special interest in the exhibition of living economic plants in one of our greenhouses, and had advised some changes in this respect, by which the number of species would have been considerably increased.

But his untimely death renders necessary a postponement of these desirable improvements.

The Director desires to place on record, as he has had occasion to do many times before, his deep obligations to the members of the Overseers' Committee on the Botanic Garden for their advice and constant assistance. He wishes, also, to bear testimony to the well-directed zeal and generosity of the Assistant Director.

GEORGE LINCOLN GOODALE, *Director*.

DECEMBER, 1901.

## THE ARNOLD ARBORETUM.

TO THE PRESIDENT OF THE UNIVERSITY: —

SIR,—I have the honor to submit the following report on the progress and condition of the Arnold Arboretum during the year ending July 31st, 1901.

The principal work of construction accomplished during the year has been the draining of the large peat meadow near the Jamaica Plain entrance, made possible by the construction of the sewer built by the City of Boston to lower the water-level in this meadow and adjacent territory, and finished last winter. A drainage canal from five to six feet deep has been cut through the meadow, and in connection with this tile drains have been laid where necessary. In this way about fourteen acres of land which has been too wet for the satisfactory growth of trees has been made available for the collections and for the use of the public. About thirty acres occupied by the Birches, Nettle-trees, and conifers have been plowed, graded, and laid down permanently in grass; these trees have been carefully cultivated and the ground about them enriched. The boundary plantations on the Peter's Hill extension have been finished; a beginning of the arrangement of the systematic groups of Willows and Poplars has been made on the lower southern and southeastern slopes of the hill; and a large group of conifers, principally Spruces and Firs, occupying several acres, has been planted near the Walter Street front, to supplement groups of these trees already established on the opposite side of Bussey Street. The strip of land between the drive at the eastern base of the hill and the woods which separate this drive from Bussey Street has been planted with a collection of the different species and varieties of Crab-apples, to supplement the collection of these trees and shrubs near the Forest Hills entrance, which is greatly confined for want of sufficient space and is an inadequate representation of these plants. It is hoped that this new group, which will eventually occupy between two and three acres, will in a few years prove an attractive popular feature when the trees are in flower, and, like the flowering of the garden varieties of the Lilac, bring many visitors to the Arboretum.

The exchange of plants and seeds with other horticultural and botanical establishments has been continued during the year. 6,119 plants and 1,739 packets of seeds have been distributed, as follows:

To the United States, 6,074 plants and 328 packets of seeds; to Canada, 17 packets of seeds; to Great Britain, 45 plants and 205 packets of seeds; to the continent of Europe, 1000 packets of seeds; to Japan, 179 packets of seeds; to Java, 10 packets of seeds. There have been received during the year 6,183 plants (including grafts and cuttings) and 415 packets of seeds.

During the year 2,479 sheets of dried plants have been added to the herbarium, and 1,928 sheets distributed to other establishments.

The library has received by gift 856 bound volumes and 460 pamphlets.

The study of the genus *Crataegus* (Hawthorns) as it appears in North America has for the last two years largely engrossed the scientific activity of the Arboretum, and large collections of these plants have been made in all parts of the country where they grow. Sowings of the seeds of many species have been made, and seeds and herbarium specimens have been distributed to the principal gardens and botanical museums in the United States and Europe. Four technical papers on this subject have been published by me during the year, but careful and sustained work extending through several years will be needed before all the forms which this genus has developed in North America can be satisfactorily elucidated and added to the collection. This work, which has already made known a number of trees which had previously escaped the notice of botanists, has delayed the appearance of the two final volumes of *The Silva of North America*; these will probably appear, however, before the end of another year.

Satisfactory progress has been made on the Bradley Bibliography of dendrological literature, and about thirty-one thousand cards are now finished.

In response to an appeal to the public made by the Visiting Committee, \$95,970 has been added during the year to the Endowment Fund of the Arboretum in sums varying from \$5 to \$5,000. It is a cause of satisfaction that these gifts for the endowment of the Arboretum have not come entirely from persons living in Massachusetts, and that a substantial portion has been contributed from other states.

I take this opportunity to express my thanks again to the Trustees of the Massachusetts Society for the Promotion of Agriculture for their annual grant of \$2,500 for the maintenance of the Arboretum, and to the members of the Visiting Committee for their support and assistance.

C. S. SARGENT, *Director.*

## THE CHEMICAL LABORATORY.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,— No changes were made in the courses of instruction offered for the year, and but a single change in the instructors in charge of these courses: Mr. G. W. Heimrod gave the lectures in Electrochemistry during the second half-year (Chemistry 7<sup>s</sup>) in place of Dr. G. N. Lewis, who had been assigned a Parker Fellowship.

The number of students in the several laboratory courses during the year and in June, 1900, was as follows:—

	October, 1900.	January 1st, 1901.	June 1st, 1901.	June 1st, 1900.
Chemistry <i>B</i> . . . . .	81	72	58	53
Chemistry 1 . . . . .	389	314	278	304
Chemistry 3 . . . . .	132	124	122	86
Chemistry 4 . . . . .	42	41	37	33
Chemistry 5 . . . . .	35	33	29	21
Chemistry 6 . . . . .	17	16	14	14
Chemistry 9 . . . . .	19	17	..	..
Chemistry 10 . . . . .	..	..	16	13
Chemistry 20 <i>a</i> . . . . .	2	2	2	2
Chemistry 20 <i>b</i> . . . . .	6	5	5	7
Chemistry 20 <i>c</i> . . . . .	2	2	2	3
Chemistry 20 <i>d</i> . . . . .	3	3	3	4
Chemistry 20 <i>e</i> . . . . .	4	4	4	2
Special . . . . .	1	1	1	..
Total . . . . .	683	634	571	542

The number of students in General Chemistry (Chemistry *B*), Descriptive Chemistry (Chemistry 1), and Qualitative Analysis (Chemistry 3) was much larger than in any previous year, and for the first time we were unable to provide desks for a considerable number of men who wished to enter these courses. Our records do not show how many of the unsuccessful applicants immediately withdrew into courses in other subjects, but forty students allowed their applications to remain on file, with the hope of securing working places within a reasonable time. Places were assigned to sixteen of these men during the month of October, but there were thirteen names still on the waiting list on the first of December; and there were five men who were unable to secure desks until after the Christ-

mas recess. The proportion of students who were unable to begin their work in the laboratory at the opening of the year was largest in Descriptive Chemistry (Chemistry 1), since collegiate seniority was considered in the assignment; it here reached the serious ratio of one to every eleven or twelve applicants. Among the students who were thus seriously handicapped in their work were several members of the Lawrence Scientific School for whom Chemistry was a required study. During the whole year students in the two elementary courses (Chemistry B and Chemistry 1) were obliged to work in the same laboratory, to their own disadvantage and to the great inconvenience of their instructors. In the more advanced courses the numbers were unusually large and the various laboratories were filled or over-crowded.

The following investigations were made during the year under the direction of Professor Jackson: Mr. R. B. Earle continued his work upon the colored substances derived from nitro compounds by the action of sodic alcoholates; Mr. H. C. Porter took up the study of tetrabromorthoquinone which had been begun by Mr. W. Koch in the previous year; Mr. A. H. Fiske studied many derivatives of *v*-tribrombenzol; Mr. K. L. Mark continued his study of dicyanamide, and later attempted to prepare from alizarine the corresponding orthoquinone.

Professor Sanger, at the request of the Bureau of Construction and Repair, United States Navy Department, made an extended investigation into the absolute and comparative merits of two processes for the fire-proofing of certain woods used in the construction and internal fitting of vessels of the United States Navy. The investigation was carried on in conjunction with Naval Constructor William J. Baxter, U.S.N., under whose direction exhaustive physical tests were made on the woods at the Boston Navy Yard. With Mr. M. L. McCarthy, Professor Sanger studied the determination of zinc by electrolysis, and devised a method for the determination of zinc in the presence of large quantities of organic matter. Under his direction Mr. O. L. Daudt made a study of the method of Kinnicutt for the determination of carbonic oxide, with particular reference to its use in the examination of the air of living rooms, and Mr. N. R. Davis investigated the action of polysulphides of ammonium upon cupric sulphide.

The following investigations were carried on under the direction of Professor Richards: Mr. G. W. Heimrod completed the chemical work upon the silver voltameter, and showed that the new form of this instrument is exceedingly trustworthy; Mr. E. H. Archibald



determined the atomic weight of caesium by the analysis of the chloride and found the value 132.89 as the average of ten determinations; Mr. F. Bonnet, Jr., continued his work upon the constitution of chromic solutions; Mr. H. Bisbee worked out the mechanism of the occlusion of magnesia by calcic oxalate, determined the solubility of calcic oxalate and studied certain phenomena of electrolytic deposition; Mr. R. C. Wells verified with great care the transition temperature,  $32^{\circ}.38$ , of sodic sulphate by means of three new standard thermometers recently purchased by the Laboratory, and Mr. E. H. Webb continued the photographic study of the allotropism of steel.

Dr. Torrey investigated the action of alkaline nitrites upon certain organic bodies containing halogen.

Professor Hill continued the study of dehydromucic acid and certain of its derivatives; under his direction Mr. W. J. Hale continued the investigation of nitromalonic aldehyde, and Mr. O. F. Black undertook the study of the product formed by the action of potassic nitrite upon ethyl mucobromate.

The following papers were published during the year:—

1. Certain Derivatives of Metadibromdinitrobenzol. By C. L. JACKSON and W. P. COHOE. *Proc. Am. Acad.*, xxxvi, 75; *Am. Chem. Journ.*, xxvi, 1.

2. A New Conception of Thermal Pressure, and a Theory of Solutions. By G. N. LEWIS. *Proc. Am. Acad.*, xxxvi, 145; *Zeitschr. phys. Chem.*, xxxv, 343.

3. On Certain Derivatives of Orthobenzoquinone. By C. L. JACKSON and W. KOCH. *Proc. Am. Acad.*, xxxvi, 197; *Am. Chem. Journ.*, xxvi, 10.

4. On the Action of Sodic Sulphite on Tribromdinitrobenzol and Tribromtrinitrobenzol. By C. L. JACKSON and R. B. EARLE. *Proc. Am. Acad.*, xxxvi, 231; *Am. Chem. Journ.*, xxvi, 46.

5. Suggestion concerning the Nomenclature of Heat-Capacity. By T. W. RICHARDS. *Proc. Am. Acad.*, xxxvi, 327; *Zeitschr. phys. Chem.*, xxxvi, 358.

6. Symmetrical Triiodbenzol. By C. L. JACKSON and G. E. BEHR. *Proc. Am. Acad.*, xxxvi, 333; *Am. Chem. Journ.*, xxvi, 55.

7. A Study of Growing Crystals by Instantaneous Photomicrography. By T. W. RICHARDS and E. H. ARCHIBALD. *Proc. Am. Acad.*, xxxvi, 342; *Am. Chem. Journ.*, xxvi, 61; *Phil. Mag.*, Nov., 1901.

8. A Table of the Atomic Weights of Seventy-seven Elements. By T. W. RICHARDS. *Proc. Am. Acad.*, xxxvi, 601.

9. The Occlusion of Calcic Oxalate by Calcic Oxalate, and the Solubility of Calcic Oxalate. By T. W. RICHARDS, C. F. MCCAFFREY and H. BISBEE. *Proc. Am. Acad.*, xxxvi, 377; *Zeitschr. anorg. Chem.*, xxviii, 71.

10. The Possible Significance of Changing Atomic Volume. By T. W. RICHARDS. *Proc. Am. Acad.*, xxxvii, 1.
11. The Law of Physico-Chemical Change. By G. N. LEWIS. *Proc. Am. Acad.*, xxxvii, 49; *Zeitschr. phys. Chem.*, xxxviii, 205.  
On Dehydromucic Acid. By H. B. HILL:
12. On Dehydromucic Acid and Certain of its Derivatives. By I. K. PHELPS and W. J. HALE. *Am. Chem. Journ.*, xxv, 445.
13. On the Reduction of Dehydromucic Acid. By H. B. HILL and A. S. WHEELER. *Am. Chem. Journ.*, xxv, 468.
14. The Solubility of Manganous Sulphate. By T. W. RICHARDS and F. R. FRAPRIE. *Am. Chem. Journ.*, xxvi, 75.
15. The Standard of Atomic Weights. By T. W. RICHARDS. *Proc. Am. Acad.*, xxxvii, 177.

It was impossible to make further provision during the summer for the accommodation of students in Elementary Chemistry since no floor space remained which could be used for such a purpose. At the opening of the current year a still larger proportion of students, who wished to begin the study of Chemistry with us, were unable to secure desks. In the more advanced courses we are now barely able to provide our students with suitable working places; in the near future it will doubtless be impossible to find room for all who apply, unless, indeed, the growth of our advanced courses is materially retarded by the loss in successive years of an increasing number of students in the elementary courses, who are necessarily excluded from the over-crowded laboratories in Boylston Hall.

HENRY B. HILL, *Director.*

## THE JEFFERSON PHYSICAL LABORATORY.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,— It is gratifying to notice the growth of a taste for quantitative work in the subject of Physics; for the courses in which this work is made the essential feature are steadily growing in the number of students. The purely lecture system in Physics has become obsolete in this University.

While the methods of instruction have been revolutionized during the past twenty-five years, the subject also has undergone great changes. My predecessors, lecturing on light and heat, did not feel it necessary to include the subject of electricity and magnetism in their treatment of radiant energy; for the great theory that this energy is electromagnetic had not been developed during their period of work in the University. A great advance was made in the last century when the theory of the undulatory nature of light was established. We have made a still greater stride in conceiving the waves of light and heat as electromagnetic waves, and in thus connecting in close relationship phenomena which our ancestors treated as separate and individual manifestations of nature.

Within five years, also, the subject of Physical Chemistry has become of transcendent importance; and the advanced students in Physics, both in this country and abroad, are turning their attention to this rapidly growing subject. Most of the physical units and physical constants have been determined to a degree of accuracy which is satisfactory for the needs of the engineer; and the physicist is now compelled to study the motions of the ultimate particles of matter, the molecules and ions, in order to advance our knowledge. The subject of the X-rays has given a great impetus to this new branch of physical science. Molecular physics has thus become the leading subject of the day, and the young physicist must have a knowledge of Chemistry as well as of Pure Physics and of Mathematics. While in most subjects the limits of accuracy are very wide, in Physics an accuracy often of a fraction of one per cent. can be obtained; but the difficulty of getting a result true even to one per cent. is very great. The student in Physics soon realizes that he has entered upon a strenuous career; and this conviction accounts in a great measure for the comparatively few graduate students in

all universities who continue in the work of physical investigation. It is natural to desire quick results; these, however, generally result in a lower degree of accuracy.

The number of students in the physical courses during the year was 470; we enter upon a new year with close upon 500.

Seven graduate students were engaged upon investigations during 1900 and 1901. Four of these students also acted as assistants. The positions of assistants are much valued, for they afford an experience in teaching by means of which one's knowledge is tested. The subjects of research were as follows:—

Polarization phenomena and resistance of the voltaic cell. Mr. C. H. AYRES. To appear in the *Physical Review*.

On a new form of spectroscope. Mr. THEODORE LYMAN. Publication reserved, in order that the instrument may be used in an investigation upon the short waves of light.

Occlusion of hydrogen by palladium. Mr. W. E. MCELFRISH. Investigation still continued.

Relaxation time of electric condensers. Mr. H. H. BROWN. A subject for which a prize has been offered by the Berlin Academy. Mr. BROWN has accepted a position in the Belmont School in California, and has taken the necessary apparatus with him to finish the investigation, which has already occupied two years.

A modified form of vacuum pump for investigation in gases. Mr. J. E. BURBANK. Mr. BURBANK has accepted a position in a high school and the investigation was discontinued.

Electric waves on wires and in paraffine. Professor W. G. HORMELL. This paper was published in the *American Journal of Science* for December.

Contribution to the theory of the oscillator used in wireless telegraphy. Mr. C. H. CHANT, instructor in the University of Toronto. This article is published in the *American Journal of Science* for January.

The magnetic effect of rapidly moving electric charges. Mr. E. P. ADAMS, holder of the Tyndall Scholarship. Published in the *London Philosophical Magazine*.

Actinic effects of electric sparks between terminals of different metals. Mr. E. P. ADAMS and Professor J. TROWBRIDGE. Still unpublished.

Relations between the actinic effect of electric sparks and the energy necessary to produce them. Mr. C. H. CHANT and Professor J. TROWBRIDGE. To be continued.

The effect of ionization and electric resistance. Mr. T. C. MCKAY. Still continued.

The spectrum of aqueous vapor. Professor J. TROWBRIDGE. Still unpublished.

The spectra of hydrogen and some of its compounds. Professor J. TROWBRIDGE. Published in the *American Journal of Science* and in the *London Philosophical Magazine*.

In any statistical account of the number of graduate students engaged in research in the laboratory it must be borne in mind that the four assistants have been occupied either in independent investigations or in researches with the professors.

Professor Hall has given attention to the Electron theories of electrical and thermal conduction, and the possibility of producing ionization in metals by means of the X-rays, or other forms of radiation.

Professor Sabine has continued his work in acoustics, and is occupied upon the cause of the relative phase retardation of the principal polarized components of light undergoing total internal reflection. He has also devised an optical color mixer which promises to be of great service in chromatics.

Mr. C. H. Chant, of the University of Toronto, and Professor W. G. Hormell, of the Ohio Wesleyan, completed their investigations for the degree of Doctor of Philosophy during the year; and on their return to their respective universities sent two of their graduate students to study in the Jefferson Physical Laboratory.

Mr. H. H. Brown, graduate student, gave during the year a course of lectures on the ionization of gases which were well attended. These lectures were the first lectures given by a doctor of philosophy unattached to the teaching staff, and the result seems favorable to a continuance of the experiment.

It is encouraging to reflect that, although popular delusions which seem to many to have the characteristic aspect of scientific truth, may have at times great vogue, there is a small but precious contingent of young men who are being carefully trained to scientific accuracy. It may be said that the hope of the world, in so far as it is founded on a true knowledge of our surroundings, resides in the increase of such workers. Considered from this point of view, the recent gift of Mr. Coolidge for physical research is a most notable one; for it is the first recognition in America of the great importance of investigations in Physics, and of the necessity of a suitable endowment for their prosecution. The gift will greatly aid the professors and the graduate students in the Department in making this University a centre of research.

JOHN TROWBRIDGE, *Director.*

## THE PSYCHOLOGICAL LABORATORY.

TO THE PRESIDENT OF THE UNIVERSITY :—

SIR,—The work of the Psychological Laboratory was carried on during the past year along exactly the same lines as in the preceding year, by the same instructors, and without important changes in the technical equipment. While the elementary courses were well attended, the chief emphasis was again laid on the original research work, in which twenty-one advanced students were engaged.

The following investigations have been completed or brought to a provisional conclusion: Mr. Holt has studied the phenomena of partial blindness and visual anaesthesia during voluntary eye-movements; Mr. MacDougall has examined the absolute consciousness of direction and distance; Mr. Messenger has carried on his investigation into the discrimination of tactual sensations, supplemented by Mr. George's study of the temporal relations of such discriminating acts; Mr. Haines has completed his extensive work on combinations of simple judgments, and Mr. Stetson his study of rhythm and rhyme; Mr. Moore has been engaged with the voluntary power over memory pictures, Mr. Hylan with the duration of certain acts of apperception, Mr. Dunlap with the perception of tactual time-intervals, and Mr. Amsden with certain optical illusions; Mr. Yerkes has carried on his large work on the reaction-times of animals, supplemented by studies in the associations of animals; Mr. Huggins has worked on the habits of the crayfish, Mr. Rouse on the emotions of birds.

More than in previous years has the double need been felt, first, of an official organ of publication; secondly, of a laboratory building which should offer more satisfactory quarters for work than those in Upper Dane Hall. In both directions the first steps have been taken during the past year.

The papers of the laboratory students have thus far been scattered. Many of them have appeared in the Psychological Review, but the space at our disposal in the columns of that magazine has never been in proportion to the quantity of work produced. Some of the more extensive investigations of previous years, including even some doctors' theses, had to remain unpublished. The plan which has been formed now is to publish most of our researches under the title

“Harvard Psychological Studies,” as special Supplementary Volumes of the *Psychological Review*. Favorable conditions have been secured from the publishers. The first of these volumes, containing about fourteen papers from the above-mentioned work of the last year, is to appear in the spring of 1902.

Our hopes for a new laboratory are not quite so near fulfilment at present, but in this respect also the last year has given the decisive impulse. The Philosophical Division together with the Visiting Committee decided in the spring of 1901 to work systematically toward the erection of a spacious building, devoted entirely to the work of the Division, including that in philosophy, psychology, sociology, and education. It is the wish of all concerned to call the proposed building after the man who among all Harvard graduates gave most inspiration to philosophical feeling, — Ralph Waldo Emerson. It is our hope to open Emerson Hall on the hundredth anniversary of his birthday, in May, 1903. The motives which led us to desire such a building, and the purposes which it can serve not only for the department but for the whole University and community, I have fully set forth in a circular which was reprinted in the June number of the *Harvard Graduates' Magazine*. While the first two stories of the building will be devoted to lecture rooms, libraries, seminary rooms, etc., the whole third story will be a psychological laboratory, with about sixteen rooms adjusted to the special needs of our work.

HUGO MÜNSTERBERG,  
*Professor of Psychology.*

## THE OBSERVATORY.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,— Three important astronomical events have occurred during the past year: the opposition of the Planet Eros, which brought this interesting object nearer to the Earth than it will be again for many years; the appearance of the New Star in Perseus, the brightest object of its class which has been seen for three hundred years; and the Total Eclipse of the Sun in Sumatra, in which the duration of totality was greater than in any similar event during many years.

Fifty directors of observatories offered to coöperate with the Director of the Paris Observatory in observing the position of Eros to determine the solar parallax. Additional observations made here, therefore, did not seem necessary. On the other hand, measures of the light promised to be of special importance; and their value has been greatly increased by the discovery that the light of Eros is variable.

Much attention has been paid to the study of the New Star, as described below. It should be mentioned, however, that it is much more difficult to discover a faint object of this class than a bright one, and that of the eight new stars observed during the last fifteen years six, including all that were faint, were found at this Observatory. The general failure of the Eclipse observations in Sumatra, owing to clouds, seems to justify our policy of not spending much money on such work. Instruments are loaned to observers who will go in any case, and the large expense of sending special observers is thus avoided.

Last year it was shown that the unpublished material at the Observatory would fill about twenty-eight volumes of the *Annals*. Accordingly an effort has been made during the past year to put it in shape for publication, or at least in such a form that its final publication would not be a matter of great difficulty. For this purpose samples of many of the tables have been put in type, so that the exact form may be settled. It appears that of these volumes two and a half have been completed and distributed, four and a half are partly in type, good progress has been made with twelve, and but little has been done with nine. The importance of an early completion of this work cannot be over-estimated. A small additional



expenditure would permit rapid progress; and delay endangers the possible loss of much work on which large expenditures of time and money have already been made.

#### OBSERVATORY INSTRUMENTS.

*East Equatorial.*—The observations with this instrument have been made by Professor O. C. Wendell and have been of the same general character as in previous years. Over sixteen thousand photometric light comparisons have been made, largely with the polarizing photometer with achromatic prisms. With this instrument 1,224 photometric comparisons were made of Nova Persei, No. 2, 976 of SS Cygni, 944 of R Ursae Minoris, 896 of U Cephei, 560 of  $\chi$  Cygni, 512 of  $\beta$  Persei, 352 of the Algol variable + 45° 3062, 288 of  $\delta$  Serpentis, 256 of the variable 73.1901 Scuti, 242 of W Delphini, 240 of Z Herculis, 160 of R Lyrae, 144 of + 42° 3388, and 128 of U Geminorum. In addition to the above, 1,804 comparisons were made of  $\circ$  Ceti, 192 of U Camelopardali, and 1,984 of double stars with a second photometer adapted to the comparison of stars too near together to be measured with the first instrument. The same instrument has been used in the photometric measurement of Jupiter's satellites while undergoing eclipse. 17 eclipses have been observed, making the total number 719. The light of the Planet Eros was determined photometrically on 50 nights, the number of settings being 2,456. The Planet Tercidina was also measured on 8 nights, and Vesta on 5 nights, the number of settings being 224 and 192, respectively. Photometric observations of comparison stars for variables have also been continued, the number of settings being 1,512. 312 relative estimates have also been made. The systematic observation of variable stars of long period throughout their changes, and the reduction of the results to the scale of the meridian photometer, have been continued. A few estimates by the method of Argelander have been made, generally when the stars were too faint to be observed with small instruments. The selection and measurement of twelfth magnitude standards and the selection of fourteenth magnitude standards have been continued. Several other objects of a miscellaneous character have also been observed.

Similar observations of variables and comparison stars have been made with the West Equatorial. With it 961 estimates of variables, 61 estimates of comparison stars, and 81 estimates of Nova Persei, No. 2, have been made by Miss Cannon. 163 estimates of variables have been made by Mr. Colson, and 65 by Mr. White. 82 estimates of Nova Persei, No. 2, have also been made by Mr. Colson. 2,386

estimates of variables, and 238 estimates of the Nova have been made by Mr. Campbell with a field-glass and with the naked eye. 132 estimates of the Nova were made by Mr. Dunne with an opera glass and with the naked eye. 651 estimates of variables and of the Nova have been made by Mr. F. E. Seagrave of Providence, and communicated by him to this Observatory. Observations of variables have also been communicated by Mr. John H. Eadie of Bayonne, N. J., by Mr. Zaccheus Daniel of Lewisburg, Pa., and by Señor Manuel Pereira of St. Michaels, Azores.

*Meridian Circle.* — Observations of zone stars, fundamental stars, and almanac stars were made on 12 nights, for the purpose of comparing the results found with the present apparatus of spider lines and declination micrometer with those formerly obtained with ruled glass plates. The work of one night was merely experimental, and not reduced; the rest was reduced and prepared for publication as Vol. XLI, No. VII, of the Annals of the Observatory. The observations comprised in all, 77 of fundamental stars, 212 of zone stars, and 63 of almanac stars. Observations of the Planet Eros were made by Mr. Dunne on 8 nights, during which there were 37 observations of comparison stars, and 65 of clock stars. Mr. Dunne also observed Nova Persei, No. 2, on 5 dates early in 1901, and on 8 dates six months later. This work includes 109 observations of clock stars. Additional observations were made for clock error and to determine other instrumental constants.

The reduction of the observations of stars in the zone —  $9^{\circ} 50'$  to —  $14^{\circ} 10'$  has progressed as follows: The corrections to the original values of  $\Delta T + m$  and the polar point, required by the final places of the fundamental stars, have been computed for 1888, and those for the polar point also for 1890, 1891, 1892, and 1895. About two thirds of those for  $\Delta T + m$  are computed for 1890 and 1891. The examination of the observations made during the years 1888 to 1892 inclusive, for large errors of reduction, is complete for eleven of the twenty-four hours of right ascension, and nearly complete for four and a half hours more. The observations made during the years 1896, 1897, and 1898, originally reduced with the final places of the fundamental stars, have all been reduced to 1900, so far as they relate to stars originally intended for observation. The precessions and secular variations of all these stars have also been computed. About one quarter of those relating to stars casually observed are now computed.

The reduction of the observations made by the late Professor Rogers during the years 1879 to 1888 has been continued by Miss

S. C. Bond under the supervision of Miss Anna Winlock. About two thirds of the reductions from apparent to mean place have been computed.

*12-inch Meridian Photometer.* — With this instrument 54,448 settings have been made by the Director on 126 nights. In all 198,672 settings have been made in three years. Although the observations have been maintained without interruption throughout the entire year, except for a few days at a time, the number is much less than in previous years. This is due to two causes: first, the extraordinary spell of cloudy weather from March to July; secondly, the faintness of the stars recently observed, which rendered their identification and measurement slower and much more laborious. The catalogue of 9,233 Durchmusterung stars was completed; and observations were made of 36 sequences of groups of stars of the twelfth magnitude. This work has also been completed and in a great measure reduced. Sequences have been selected for 67 of the variables contained in Series I, II, and III of Hagen's Catalogues, which, when observed, with the measures previously made, will permit the magnitudes of all the stars in this work to be reduced to the photometric scale. The Planet Eros has been observed on 56 nights, besides comparison stars and various miscellaneous objects.

*Meridian Photometer.* — With this instrument 33,316 settings have been made by Professor Solon I. Bailey on 98 nights. The total number of settings so far made with this instrument is 1,033,180. The principal work this year has been the observation of a catalogue of 376 standard stars of about the fifth magnitude, one in each region  $10^{\circ}$  square. A large part of these stars have been observed on ten nights, eight settings being made on each night. A large number of comparison stars for Eros and other similar objects have also been observed.

#### HENRY DRAPER MEMORIAL.

The number of photographs taken with the 11-inch Draper telescope was 673, making 13,435 in all with this instrument; with the 8-inch Draper telescope, 1,766, making the total number 27,656. The number of photographs of the stars taken at Cambridge during the year is 4,081. 9 eclipses of Jupiter's Satellites, and 5 occultations, have been successfully observed with the 11-inch Draper telescope. The number of objects having peculiar spectra, found by Mrs. Fleming from an examination of the photographs, is unusually small this year, as a large portion of her time has been devoted to the preparation of the Annals. Two new variables, three stars having

peculiar spectra, and the presence of bright hydrogen lines in the spectrum of U Andromedae have, however, been found. One variable has been found by the Director. Much time has been spent on the preparation of a volume of the *Annals*, which will contain photographic magnitudes of 195 variables discovered here, on all the photographs taken from 1885 to 1901, inclusive. The magnitudes and position of the comparison stars for these variables are nearly completed and will fill the greater portion of another volume. A variety of studies have been made of the New Star in Perseus. An examination of the early plates of the region showed that on February 19, 1901, two days before it was first seen, if then in existence it must have been fainter than the twelfth magnitude. By promptly photographing its spectrum on February 22 and 23, through thick clouds, remarkable evidence was obtained of the early condition of this body. A series of measurements of different portions of the continuous spectrum, and of the relative intensity of the bright lines, shows how much of the photographic brightness is due to each portion of the spectrum. The discovery of the variability in the light of Eros has added greatly to the value of the early photographs of this body, and will enable the period to be determined with great accuracy. Photographs of the spectrum of lightning were obtained last summer for the first time, with the Draper instruments. The resemblance to the spectra of new stars is curious, and the variation in different flashes is very instructive.

Mr. Edward S. King continues in charge of the work of taking and developing the photographs. Several novelties have been introduced. For example, the spectrum of Nova Persei, when within  $10^\circ$  of the horizon, has been photographed with an objective prism, the latter being turned by a computed amount so as to correct for the atmospheric refraction in declination. Photographs of stellar spectra have been shaded automatically, so that the ends are as intense as the centre, by interposing contact prints and porcelain screens.

In the systematic charting of the sky the 8-inch Draper telescope covers all parts north of declination —  $12^\circ.5$  from two to four times a year: the Cooke lens covers all parts available at this latitude two or more times a month; and the Transit Photometer furnishes on every clear night a record of all stars crossing the meridian and visible to the naked eye. On the best plates of these three series of photographs the faintest stars visible are of about the thirteenth, twelfth, and sixth magnitudes, respectively. In extension of this scheme, work has been inaugurated with a small Ross-Zeiss lens

which covers a field about  $60^\circ$  square. An exposure of one hour shows stars as faint as the eighth magnitude; and all visible in a single night can be photographed by exposing seven plates. Similar series of photographs of the southern stars are taken at Arequipa.

## BOYDEN DEPARTMENT.

The station at Arequipa has remained under the direction of Mr. H. C. Bailey. No further difficulties have been experienced in the transportation of the photographic plates. The shipments have been made by the Isthmus of Panama.

The number of photographs taken with the 13-inch Boyden telescope is 140, making 10,354 in all; and 2,269 with the 8-inch Bache telescope, making 28,608 in all. The total number of photographs taken this year at the Arequipa station is 4,269. 200 visual observations of 50 southern variable stars have been made, by Argelander's method, by Mr. R. H. Frost. The systematic examination of all stars south of declination  $-30^\circ$ , between the magnitudes 6.3 and 7.0, inclusive, for the detection of new double stars, has been continued by Mr. Bailey. Only a few stars, which culminate during the cloudy season, remain to complete this work.

On January 1, for reasons stated in the last annual report, the outlying meteorological stations at Mollendo, La Joya, Vincocaya, Puno, and also the stations on El Misti, were discontinued. During the year 1900, self-registering wind instruments, devised and constructed by Sr. Muñiz, were used at these stations, in addition to the instruments heretofore employed. Good records of the direction and velocity of the wind were obtained. The Fergusson Meteorograph was installed during 1900 at the Mt. Blanc station, on the flank of El Misti. The records obtained, although by no means satisfactory, may yield results of value.

The discussion of variables in clusters has been carried forward by Professor S. I. Bailey. Besides the observations of the variable stars in  $\omega$  Centauri, mentioned elsewhere, the discussion of 50 photographs of the variables in Messier 3, and 100 photographs of those in Messier 5, is in progress. It has been found that 50 photographs of a cluster, if well distributed through a number of years, furnish, in general, sufficient material for the determination of the periods and light-curves of the variables. To complete this number of photographs for the remaining clusters, which are known to contain variables, about 200 plates are needed. These plates require long exposures, and must be followed with special skill. They are now

being taken at Arequipa with the 13-inch telescope by Mr. Frost. Many of the variable stars in Messier 3 and Messier 5 have a period of about half a day, and the light changes are rapid and striking. A large number of the measurements of brightness have been made by Miss E. F. Leland.

#### BRUCE PHOTOGRAPHIC TELESCOPE.

The Bruce photographic telescope has remained during the year under the special care of Dr. DeLisle Stewart, assisted by Mr. Frost. During the year, 919 plates have been taken with this instrument, making 5,686 in all. Many photographs of Eros, the planets, comets, and other special objects have been obtained. 906 exposures on Eros have been made on 172 plates on 131 nights, and 91 exposures on comparison stars for Eros. From an examination of 348 plates, Dr. Stewart has found 298 new nebulae, of which 9 are spiral, and 8 ring nebulae. Also, a number of known nebulae have been shown by these photographs to be spiral, or ring, in form. 29 asteroid trails have been photographed, and an unsuccessful search has been made for Swift's, Barnard's (1884, II), and Brorsen's periodic comets, the telescope being given a motion equal to that of these bodies.

#### BLUE HILL OBSERVATORY.

The work of the Observatory continues to be performed by three assistants who are paid and directed by Mr. Rotch. To the regular observations were added in 1901 semi-daily observations of audibility, and of the refraction of Mt. Wachusett. Between December and March, inclusive, nine kite-flights were made, in which the average height of the meteorograph above the sea was 7,275 feet, and the greatest height was 12,550 feet. The steam reeling apparatus has since been rebuilt to adapt it to longer wire of increasing size, which may enable greater heights to be reached. In order to obtain observations with kites in calm weather they were flown from a moving tug-boat in Massachusetts Bay on August 22, and afterwards from an eastward-bound transatlantic steamer. During a voyage of eight days, flights were made on five days; and the resulting meteorological observations are probably the first obtained at a considerable height above the Atlantic Ocean. More important was the demonstration that kites can be flown from a steamer in almost all weather conditions, since it opens an extensive field, especially in the tropics, for

researches with them. A card catalogue has been compiled of the books and pamphlets at the Observatory, there being about 500 of the former and 3,000 of the latter. Periodicals and volumes of observations are not included.

## MISCELLANEOUS.

*Library.* — The Library of the Observatory has been increased by 361 volumes and 1,257 pamphlets. The total number of volumes and pamphlets in the Library on October 1, 1901, were 10,077 and 16,206, respectively. 6 volumes and 8 pamphlets have been deposited in the Harvard College Library. Special efforts are being made to render the meteorological, as well as the astronomical, collection of publications here, as well as at Arequipa, as complete as possible. Owing to the number of buildings connected with the Observatory, duplicates of important publications are in constant use. Every year the need of more space for books is becoming more urgent.

*Telegraphic Announcements.* — During the last year 16 bulletins have been issued, making 88 in all. The bulletins are sent gratuitously to all such institutions, newspapers, and individuals, as desire them and are likely to make use of them. In general, when a cipher telegram is received at the Observatory, it is translated, printed by an autographic process upon the bulletin sheets, and mailed within about an hour of the receipt of the original message. Several persons are prepared to take charge of the distribution, so that in the absence of one, another is available. Of the 16 messages distributed this year, 6 were received from Professor Kreutz, Kiel, 5 from the Lick Observatory, 1 from Carleton College Observatory, and 1 from the Lowell Observatory. Of the remaining 3 messages, 1 originated at the Arequipa, and 2 at the Cambridge Station of this Observatory. The distribution of the announcements by telegraph is continued to such subscribers as wish to pay for the messages. Astronomers are requested, as heretofore, to send to this Observatory announcement of their discoveries for transmission to the observatories of Europe and America. To secure prompt attention, it is requested that all cablegrams be addressed, "Observatory, Boston," and all telegrams, "Harvard College Observatory, Cambridge, Mass." All correspondence relating to telegrams and announcements should be addressed to the Director.

*Coöperation.* — The selection and measurement of standards of faint stellar magnitudes by the Yerkes, Lick, McCormick, and Harvard

Observatories have been much interrupted by the observations of Eros and of the New Star, and by the absence of eclipse observers in Sumatra. All the standards of the twelfth magnitude have been selected here, and measured with the 12-inch Meridian Photometer.

Professor R. A. Sampson of Durham, England, has courteously agreed to coöperate with this Observatory in the discussion of the photometric observations of the Eclipses of Jupiter's Satellites, made here during the last twenty-two years. The value of the final work will in this way be greatly increased.

Dr. W. Doberck has kindly consented to make a second reduction of Sir John Herschel's observations of the light of the southern stars, so as to reduce them to the scale of the meridian photometer. This will add greatly to the value of the compilation of these magnitudes to be published shortly in the Revised Harvard Photometry.

To facilitate the observation of variable stars of long period, enlargements have been made of the Durchmusterung charts of the regions surrounding 69 of these objects. Each region  $3^\circ$  square is enlarged three times, so that the scale is  $1' = 0.1$  cm. As stated in Circular No. 53, a sequence of comparison stars is entered in each chart, and copies are sent free of charge to all experienced observers who are willing to coöperate with us in their observations. Other copies are sold at cost.

*Long Focus Telescope.* — The expedition to Mandeville, Jamaica, in charge of Professor W. H. Pickering, returned last summer, after a stay of about a year. The long focus telescope is, therefore, again in Cambridge. Apparently, an instrument of this form is not well adapted to the study of the stars, unless it can have a much larger angular aperture. Accordingly, its principal use has been the collection of the material for a Photographic Atlas of the Moon. Sixteen regions are shown, each under five different illuminations. The scale is  $5'' = 0.1$  cm., so that the diameter of the Moon would be about fifteen inches.

*Distribution of Annals.* — 288 circulars were returned out of 542 issued last year to correspondents of the Observatory, asking which volumes of our Annals were contained in their libraries. Only 20 reported that their sets were complete. Nearly two thousand volumes, weighing about two tons, were accordingly distributed, completing 74 sets and making additions to 159 others. In many cases all of our volumes relating to Meteorology were sent to meteorological observatories. Few copies of the first twenty volumes of the Annals are now available for distribution.



*Publications.* — Volumes XXVIII, Part II, XXXVII, Part I, XLI, No. VI, XLIII, Part I, and XLV of the *Annals* have been published and distributed. Volume XXXVII, Part II, Fifty-eight Variable Stars of Long Period, is being published in the same form as Part I of this volume, and 16 pages are in type. Volume XXXVIII, Variable Stars in the Cluster  $\omega$  Centauri, will contain measures of the photographic brightness of 128 variable stars, on 124 plates. 165 pages are in type, and nearly all of the remainder of the manuscript is in the hands of the printer. Volume XLI, No. VII, Comparison of Results obtained with different forms of Apparatus in Meridian Observations, is in type, and is ready to be printed and distributed. Volume XLIII, Part II, containing Observations of the Blue Hill Meteorological Observatory, during the years 1899 and 1900, and a Summary of the Results from 1896 to 1900, is in course of publication, 29 pages being in type. A portion of Volume XLIV, Part II, Constants used in the Reduction of Observations made with the Meridian Photometer during the years 1891 to 1898, has been sent to the printer, but has not yet been put in type. 39 pages of Volume XLVI, containing Observations of Southern Stars, made with the Meridian Photometer in 1899, are in print. The first forty-five volumes of the *Annals* are now complete with the exception of Volumes XXXVII, XXXVIII, XXXIX, XLI, XLIII, and XLIV. The first portions of all these volumes, except Volume XXXVIII, have been distributed, and portions of all of them, except Volumes XXXIX, and XLI, are now in the hands of the printer.

Nine Circulars have been issued during the year. These are not given a general distribution, but are sent to editors of periodicals who wish to reprint them, and to all persons who wish to prepare notices of them for newspapers or periodicals. The numbers, titles, and dates of the nine Circulars mentioned above are as follows: —

53. Coöperation in observing Variable Stars. January 16, 1901.
54. Sixty-four new Variable Stars. January 24, 1901.
55. The Spectrum of  $\zeta$  Puppis. February 11, 1901.
56. Anderson's New Star in Perseus. February 27, 1901.
57. Nova Persei, No. 2. March 15, 1901.
58. Variability in Light of Eros. April 24, 1901.
59. Spectrum of Nova Persei, No. 2. June 6, 1901.
60. Objects having Peculiar Spectra. July 6, 1901.
61. Opposition of Eros (433) in 1903. August 10, 1901.

The following other minor publications have also appeared during the year : —

Fifty-fifth Annual Report of the Director of the Astronomical Observatory of Harvard College. Cambridge, 1900.

The Planet Eros. By Solon I. Bailey. *The Popular Science Monthly*, lviii, 641.

An Error in the American Ephemeris. By W. H. Pickering. *Popular Astronomy*, ix, 373.

Nova Persei. By W. H. Pickering. *Astrophysical Journal*, xiii, 277.

Electrical Action of Slides. By Edward S. King. *Photo Era*, vii, 104.

Position of Nova (3.1901) Persei. By Edward C. Pickering. *Astron. Nach.*, clv, 153.

Higgen's Variable (13.1900) Cygni. By Edward C. Pickering. *Ibid.*, clv, 245.

A Photographic Search for Periodic Comets. By Edward C. Pickering. *Ibid.*, clv, 247.

Nova (3.1901) Persei. By Edward C. Pickering. *Ibid.*, clvi, 233.

Endowment of Research. By Edward C. Pickering. *Science*, xiii, 201.

EDWARD C. PICKERING, *Director.*

## THE MUSEUM OF COMPARATIVE ZOOLOGY.

TO THE PRESIDENT AND FELLOWS OF HARVARD COLLEGE:—

During the past academic year the regular courses in Zoölogy, Geology, Geography, and Meteorology were given in the Natural History Laboratories of the Zoölogical Section (Museum of Comparative Zoölogy) of the University Museum. It was hoped that the new southwest corner piece, the Geological Section, would be completed, so that the departments of Geology, Geography, and Meteorology would take possession, at the beginning of this academic year, of the laboratories and lecture rooms provided for them, and vacate the rooms now occupied, which are much needed by the Department of Zoölogy. As the building has not been completed, the routine work of instruction will begin as before.

Ten courses in Zoölogy were given by Professors Mark, Jackson, and Parker, and Drs. Castle and Rand, assisted by Messrs. Breed, Davis, Johnson, Ordway, and five Sub-Assistants. These courses were attended by two hundred and thirty-one students. Six courses in Zoölogy were given to forty-two students of Radcliffe College.

Eighteen courses under the Geological Department were given by Professors Shaler, Davis, Jackson, Ward, and J. B. Woodworth, Drs. Jaggard and Daly, and Mr. Woodman, assisted by Messrs. Boynton, Stone, Wilder, and five Sub-Assistants. The courses were attended by five hundred and forty-eight students. Six courses were given to thirty-six students of Radcliffe College.

The Summer School of Geology, held in the Museum, was attended by thirty-three students in two courses, given by Mr. H. T. Burr, assisted by Mr. C. H. Morrill.

In recognition of his long service in successful administration of the instruction in Zoölogy under the Faculty of Arts and Sciences, Professor E. L. Mark has been appointed by the Corporation of the University Director of the Zoölogical Laboratory.

The principal addition to the exhibition collections has been a series of Japanese siliceous sponges for the Pacific room. A number of birds have been added to the faunal and systematic series, and a fine specimen of the Snow Leopard of Thibet has been placed in the Europæo-Siberian room. An additional case has also been constructed in this room. It is hoped that when the next report is

issued the exhibit of palaeozoic invertebrates will be open to the public, as considerable progress has been made in preparing the material for this exhibit. The Museum Assistants report the storage collections to be in excellent condition. In some departments the accessions have been of unusual value.

The installation of the large Bangs collection of mammals is now complete, and the old Museum collections have been incorporated with it in a separate room. Mr. Bangs has given much of his time to this work. A large and valuable series of South American mammals has been received from the Messrs. Bangs. The expenses of installing the Bangs collection were partly met by an appropriation of five hundred dollars from the Corporation of the University, applied toward the construction of storage cases.

Most important of the additions to the Department of Ornithology are the collections from the Hawaiian and Liu Kiu Islands. The latter collection contained a number of new forms, and has been reported on by Mr. Bangs in the "Bulletin" of the Museum.

There have been many gifts to the collection of recent invertebrates, among which are the Emerton collection of spiders, and the series of American ants from Professor W. M. Wheeler. From Mr. F. Du Cane Godman, through the British Museum, there has been received a set of duplicates of the land and fresh-water Mollusca of the *Biologia Centrali-Americana*. A representative collection of the rich siliceous sponge fauna of Japan has been received from Mr. Agassiz. This exceptionally fine material has been mounted, and forms part of the exhibit of the Pacific room. Mr. Agassiz has also given to the Museum a large collection of alcoholic Japanese Marine radiates. From the U. S. National Museum has been received a duplicate series of the "Albatross" (1891) ophiurans reported on by Lütken and Mortensen in the "Memoirs" of the Museum. The "Blake" Bathynomus material has been returned by Professor Bouvier, whose report will appear in the "Memoirs." The Museum leeches have been sent to Professor Percy Moore of Philadelphia for study.

Dr. Eastman has again gone West in the interests of the Museum. His expedition of last year resulted in important additions to our palaeozoic fishes, and he reports having secured valuable new material for his department.

The most important addition to the collections of the Museum is Mr. Agassiz's gift of the Davis and McConathy collections of palaeozoic corals. The Davis collection comprises more than eight thousand lots, the majority of which are the types of Major Davis's

work on the "Kentucky Fossil Corals." Major Davis spent two months at the Museum in installing these collections.

From Dr. J. M. Flint has been received a "Class Microscope" devised by him, and equipped with a rotary stage carrying about three hundred mounts of recent Foraminifera. The instrument is designed for exhibition purposes, and will be installed as soon as practicable.

Mr. Henshaw reports that the accessions to the library are greater than those recorded in recent years. A complete change has been made in the arrangement of the stacks, the large northwest room being devoted exclusively to serials arranged alphabetically under the geographical divisions adopted throughout the Museum. The two rooms of the Whitney Library have been assigned, one to geological and geographical serials and the other to the publications of geological surveys and to maps. Upwards of two hundred volumes and pamphlets treating of Ethnology have been transferred to the Peabody Museum, and nearly as many botanical works to the Gray Herbarium and the special libraries of the departments of Botany. Many duplicates have been transferred to the general library of the University. By a vote of the Council of the University Library upwards of five hundred geological volumes and pamphlets were transferred from Gore Hall to the library of the Museum. It is earnestly hoped that the officers of the central library will continue this policy and in time transfer to the Museum stacks such books in other departments of natural history as are not on our shelves. Such a segregation would make the Museum library the most complete of its kind and one of the strongest departments of the University. It would facilitate the work of students, and add much to the utility of the books and efficiency of the Museum, since books on systematic natural history are of little use apart from the collections of which they treat.

From Walter Hunnewell, Esq., the Museum has received the sum of five thousand dollars, given in memory of his son, Willard Peele Hunnewell, of the Class of 1904. By a vote of the Museum Faculty the income of this fund will be employed for the purchase of books on Entomology.

Eight numbers of the "Bulletin" were issued during the year, comprising 383 pages and 74 plates. No numbers of the "Memoirs" were published. The issues of the "Bulletin" include Dr. Stejneger's descriptions of lizards, No. XXVIII, "Albatross" expedition of 1891, and Mr. Andrew's report on his work for Mr. Agassiz on the geology of the Fiji Islands (Vol. XXXVIII, Geol. Ser., Vol. V); two

numbers of the "Bulletin" were Contributions from the Zoölogical Laboratory under Professor Mark. By a vote of the Faculty of the Museum an annual appropriation from the funds of the Museum was made toward publishing in the "Bulletin" original work of the officers and students in the Department of Geology. Three such papers were published in the fifth volume of the Geological Series of the "Bulletin," after a lapse of some years the Department of Geology again taking part in the publications of the Museum. Mr. Frank Springer's Memoir on *Uintacrinus* is nearly ready for distribution, and several reports of Mr. Agassiz's "Blake," "Albatross," and "Tropical Pacific" expeditions are in the hands of the printer. Volumes XXXVII, XXXVIII, and XXXIX, of the "Bulletin," and XXV, XXVI, and XXVII, of the "Memoirs," are in course of publication. Other publications dealing wholly or in part with collections of the Museum are: Jules Bonnier's *Epicaridae* (*Trav. Sta. Zoöl. Wimereux*), Gamble and Ashworth's *Arenicolidae* (*Quar. Jour. Micr. Sci.*) and G. M. Allen's *Louisiana Deer* (*Amer. Naturalist*).

The Faculty of the Museum has granted me leave of absence for the winter to accompany Mr. Agassiz on his proposed expedition to the Maldive Islands. The islands of the Indian Ocean are the only groups of atolls remaining which Mr. Agassiz has not examined in his explorations for the study of coral formations. He has chartered a steamer from the British India Company which is to meet him at Colombo, Ceylon. It is expected that the work will occupy about two months.

W. McM. WOODWORTH,  
*Keeper of the Museum.*

## THE ZOÖLOGICAL LABORATORY.

TO THE PRESIDENT OF THE UNIVERSITY: —

SIR, — The numbers of students attending the several courses in Zoölogy, both in Harvard University and Radcliffe College, are given in the table which follows, the numbers for Radcliffe being in italics: —

Courses, 1900-01.	Grad.	Sen.	Jun.	Soph.	Fresh.	Spec.	Sci.	Total.
Zoölogy 1 . . .		10 2	19 5	32 8	24 4	9 2	28	122 27
“ 2 . . .	2	5 7	10 2	10 2	3 7	3 3	9	42 9
“ 3 . . .	4	4 7	3	3			5	19 7
“ 4 . . .	2	3 2	7 1				2	8 3
“ 5 . . .	3	3 7	7 1				3	10 2
“ 9 . . .	2						1	3
“ 10 . . .	3							3
“ 13 . . .	2	1					3	6
“ 16 . . .	3 2	1 3				7	4	8 6
“ 20 <i>a</i> . . .	8	1					1	10
<b>Totals . . .</b>	<b>29 2</b>	<b>28 10</b>	<b>32 9</b>	<b>47 10</b>	<b>27 5</b>	<b>12 6</b>	<b>56</b>	<b>231 42</b>

Dr. Herbert W. Rand was appointed Instructor for the year 1900-01, and in addition to supervising the laboratory work in Courses 4 and 5, has had entire charge of Course 3. Dr. Castle has been made a member of the Faculty of Arts and Sciences; he will have charge of Courses 10 and 11, in addition to Course 2. Professor Parker gave for the first time a new half-course (Zoölogy 13) on Comparative Histology, besides the courses which he gave in the preceding year. The names of the assistants in the various courses appear with the statements about each course.

The number of lectures in Zoölogy 1 was slightly increased, lectures having been given regularly every other Saturday, instead of occasionally on that day, in addition to the Tuesday and Thursday lectures. The laboratory work was revised, and a new outline printed. By change in the laboratory hours the student is now required to do the laboratory work of each week on three consecutive hours, or, at least, without other interruption than that necessitated

by attendance on the lectures of the course. This regulation has made the supervision of the laboratory work more methodical and efficient than when students were allowed to separate the hours of attendance, and it is not known to have obliged any student to give up the course. Professor Parker had as Chief Assistant, Mr. R. S. Breed, and as Sub-Assistants, Messrs. H. S. Davis, J. M. Johnson, and T. Ordway. The course was taken as an "extra" by four students not enumerated in the table.

The laboratory work in Zoölogy 2 embraces the dissection and study of some ten or twelve types of animals, and varies somewhat from year to year, according to the selection of forms made for work in Zoölogy 1. The course was given substantially as in former years. Dr. Castle had as Chief Assistant, Mr. H. Crawley. Mr. W. P. Hager was Sub-Assistant during about three-fourths of the course, and Mr. G. M. Allen during one-fourth. Owing to the fact that none of the assistants had had previous experience in assisting in this course, the instructor was compelled to devote more time than he ordinarily does to personal supervision of the laboratory work.

The work in Zoölogy 4 was carried on as in former years. The laboratory was in charge of Dr. Rand, who also gave five lectures on the anatomy of *Glossiphonia*, — the animal used in studying various matters of technique. The remaining lectures of this course and those in Zoölogy 5 were given by Professor Mark. In the latter course Dr. Rand had charge of the laboratory work.

The courses in Experimental Morphology were resumed, Dr. Castle, who is to give both these courses, having begun with Zoölogy 10, *Outogenesis*. In the lectures were discussed the physical and chemical peculiarities of living substance, and the effect upon it and its activities of various agents, such as chemical agents, heat, light, gravity, etc. The special topic of sex in animals and plants was also discussed at some length. Among the special topics for experimental work assigned to students were: acclimatization to high temperatures; the effects of increased and diminished atmospheric pressure; the effect of close breeding in the case of some invertebrates; and certain questions connected with the determination of sex.

The half-course, Zoölogy 13, on Comparative Histology, with special reference to the nervous tissues, was given for the first time. The study of epithelium as a primitive tissue was followed by that of the derived tissues, nerve and muscle. There were two lectures a week, and the students each made and studied twenty



preparations involving the use of modern methods in muscle and nerve histology. Professor Parker gave the course, without the aid of an assistant.

In Zoölogy 16, carried on as usual by Professor Parker, laboratory work, opportunity for which was given to a few students in the previous year, was made obligatory for all who chose the course. It consisted in the investigation of special topics, one being assigned to each student. Of the results from the eight topics assigned, three will probably be offered for publication. The lectures were attended by three graduate students not enrolled.

There were ten students engaged in research (Zoölogy 20a) under the supervision of the Director of the Laboratory. Three of these completed their work, and, as candidates for the Doctor's degree, presented theses which were accepted. The theses of two others were nearly completed, and will be presented for acceptance early in the coming year.

Mr. G. M. Allen began studies on the degenerate eyes of some common mammals; Mr. R. S. Breed continued with excellent results his problem in insect metamorphosis; Mr. H. Crawley wrote a paper on the absorption of fat by a common newt, which secured one of the Boylston Prizes offered by the Harvard Medical School, and continued his studies on gregarines; Mr. C. A. Crowell made interesting discoveries on the growth of the ovum in reptiles; Mr. H. S. Davis worked on spermatogenesis, and Mr. J. M. Johnson on the nervous system of one of the Entomostraca; Mr. A. W. Peters, in connection with his studies on the metabolism of Infusoria, devised some valuable apparatus and methods for rearing and handling minute organisms, a description of which has been published as No. 124 of the Contributions. The work of Mr. P. E. Sargent on Reissner's Fibre has been continued, and a second preliminary paper, No. 122 of the Contributions, published; that of Mr. W. A. Willard was nearly completed, and promises to be a valuable contribution to the knowledge of cranial nerves. Mr. C. W. Woodworth has completed an extensive work on "The Wing Veins of Insects." He returns next year to the chair of Entomology in the University of California. Mr. Willard has assumed for next year the duties of the Professor of Biology in Grinnell (Iowa) College, in the latter's absence.

In June, 1901, the degree of Doctor of Philosophy was conferred upon the three following candidates in Zoölogy: Mr. Maurice Alpheus Bigelow, whose thesis was entitled "The Early Development of Lepas, a Study of Cell Lineage and Germ Layers"; Mr.

Robert William Hall, thesis, "The Development of the Mesonephros and the Müllerian Ducts in Amphibia"; and Mr. Reuben Myron Strong, thesis, "The Development of Color in the Definitive Feather." Dr. Bigelow holds the position of Instructor in Biology in the Teachers College, Columbia University, and Dr. Hall that of Assistant in Biology in Yale University. Dr. Strong takes a position in the Chicago University Academy, Morgan Park, Ill.

Dr. Charles W. Prentiss has been appointed, upon the recommendation of the Division of Biology, to a Parker Fellowship for the year 1901-02, and has already sailed for Europe, where he will pursue zoölogical investigations.

The income of the Virginia Barret Gibbs Scholarship for 1900-01 was divided between two students, Mr. Frederic W. Carpenter and Mr. Julius M. Johnson, both registered in the Graduate School. Thirteen persons, instructors and advanced students, have availed themselves of the opportunity for study afforded by the Laboratory of the U. S. Fish Commission at Woods Hole. Of these, nine have received aid from the income of the Humboldt Fund.

The meetings of the Zoölogical Club were held as usual throughout the year from 4.30 to 6 o'clock, but on Friday afternoons instead of Thursday, as in the preceding year.

Since the last report was made, Contributions Nos. 113-125 have been published. Appended is a list of —

#### CONTRIBUTIONS FROM THE ZOÖLOGICAL LABORATORY FOR THE ACADEMIC YEAR 1900-01.

113. BOWERS, MARY A. — Peripheral Distribution of the Cranial Nerves of *Spelerpes bilineatus*. *Proc. Amer. Acad. Arts and Sciences*, Vol. 36, No. 11, pp. 177-193. 2 pls. October, 1900.
114. FOLSOM, J. W. — The Development of the Mouth-Parts of *Anurida maritima* Guér. *Bull. Mus. Comp. Zoöl.*, Vol. 36, No. 5, pp. 85-157. 8 pls. October, 1900.
115. PARKER, G. H., and BURNETT, F. L. — The Reactions of Planarians, with and without Eyes, to Light. *Amer. Jour. Physiol.*, Vol. 4, No. 8, pp. 373-385. 4 figs. December, 1900.
116. YERKES, R. M. — Reaction of Entomostraca to Stimulation by Light. II. Reactions of *Daphnia* and *Cypris*. *Amer. Jour. Physiol.*, Vol. 4, No. 8, pp. 405-422. 6 figs. December, 1900.
117. GALLOWAY, T. W. — Studies on the Cause of the Accelerating Effect of Heat upon Growth. *Amer. Naturalist*, Vol. 34, No. 408, pp. 949-957. 6 figs. December, 1900.

118. PARKER, G. H. — Correlated Abnormalities in the Scutes and Bony Plates of the Carapace of the Sculptured Tortoise. *Amer. Naturalist*, Vol. 35, No. 409, pp. 17-24. 5 figs. January, 1901.
119. YERKES, R. M. — A Study of Variation in the Fiddler Crab *Gelasimus pugilator* Latr. *Proc. Amer. Acad. Arts and Sciences*, Vol. 36, No. 24, pp. 415-442. 3 figs. April, 1901.
120. PARKER, G. H., and ARKIN, L. — The Directive Influence of Light on the Earthworm *Allolobophora foetida* (Sav.). *Amer. Jour. Physiol.*, Vol. 5, No. 8, pp. 151-157. 1 fig. April, 1901.
121. STRONG, R. M. — A Quantitative Study of Variation in the Smaller North-American Shrikes. *Amer. Naturalist*, Vol. 35, No. 412, pp. 271-298. 8 figs. April, 1901.
122. SARGENT, P. E. — The Development and Function of Reissner's Fibre, and its Cellular Connections. *Proc. Amer. Acad. Arts and Sciences*, Vol. 36, No. 25, pp. 448-452. 2 pls. April, 1901.
123. PRENTISS, C. W. — The Otocyst of Decapod Crustacea: Its Structure, Development, and Functions. *Bull. Mus. Comp. Zool.*, Vol. 36, No. 7, pp. 165-251. 10 pls. July, 1901.
124. PETERS, A. W. — Some Methods for Use in the Study of Infusoria. *Amer. Naturalist*, Vol. 35, No. 415, pp. 553-559. 2 figs. July, 1901.
125. PRENTISS, C. W. — A Case of Incomplete Duplication of Parts and Apparent Regulation in *Nereis virens* Sars. *Amer. Naturalist*, Vol. 35, No. 415, pp. 563-574. 6 figs. July, 1901.

E. L. MARK, *Director.*

## DEPARTMENT OF GEOLOGY AND GEOGRAPHY.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—The instruction given in the Department of Geology and Geography during the academic year 1900–01 was essentially the same as during the preceding year, with the exception of the usual changes involved in the bracketing and unbracketing of certain courses given in alternate years, and the addition of a new course in Meteorology (Geology 1). Courses were given by Professors Shaler, Davis, and Smyth, Assistant Professors R. T. Jackson, Ward, and Woodworth, and Drs. T. A. Jaggar, Jr., and R. A. Daly. Mr. J. E. Woodman assisted in Courses 4, 5, and 8; Mr. H. C. Boynton, Austin Teaching Fellow in Geology, in Courses 5 and 16; Mr. R. W. Stone in 14, and Mr. F. M. Wilder in *B*. In addition, Messrs. G. C. Johnson, L. H. Woolsey, J. W. Goldthwait, W. L. Estabrook, and C. T. Whitney served as student-assistants in the laboratory and field-work of Geology 5, under Professor Woodworth's direction.

The elementary summer course in Geology was given by Mr. J. E. Woodman, and the summer course in Geography was given, on the same lines as in previous years, by Mr. H. T. Burr, a recent Harvard graduate and at present instructor in the State Normal School, New Britain, Conn. Mr. Burr was assisted by Mr. C. H. Morrill. Professor Shaler also gave some lectures in the summer course in Geology, and Professor Davis gave six lectures in the first week of the course in Geography.

In the spring of 1901 the Governor and Council of Massachusetts voted to deposit in the geological exhibition rooms, in the new south wing of the Museum, the large model of the Metropolitan District of Boston which was exhibited at the Paris Exposition. This model was constructed by Mr. G. C. Curtis, a former student in this Department.

A number of the advanced students in Field Geology passed creditably the United States Civil Service examination for the position of Assistant Geologist on the U. S. Geological Survey, held April 23 and 24, 1901, and were at once given field employment in Pennsylvania, Alaska, Massachusetts, and elsewhere. Some of these students were graduates of Course 22 only; others of both Courses 22 and 23. It is worthy of note that of the 46 successful applicants for this examination from all over the United States, 14 had received academic or graduate instruction at Harvard.

Professor Shaler's courses have been continued along the same lines as in previous years.

Professor Davis conducted the advanced course in Physiography (Geology 20) throughout the year, and the half course on the Physiography of the United States (Geology 6) through the second half-year; both courses having been carried on in the same way as heretofore. One student in the advanced course, Mr. A. W. G. Wilson, having spent the previous summer in field-work in Ontario, completed his thesis on the Physical Geology of Central Ontario during the winter, and received the degree of Ph.D. in Physical Geology at Commencement. Dr. Wilson has since then been appointed to a position on the Geological Survey of Canada. Another student, Mr. G. D. Hubbard, made special studies on fiords and on certain other coastal features; he has been appointed instructor in Physiography at the State Normal School, Charleston, Ill. Professor Davis's own studies have been directed chiefly to a report on the Grand Cañon district of Arizona, which he had visited during the summer of 1900, and to the problem of river terracing as illustrated in the valleys of New England. During the past summer Professor Davis made a second brief visit to the Colorado Cañon, to extend his observations of the preceding year.

Professor R. T. Jackson gave his usual courses in Palaeontology during the year. He reports that the Palaeontological teaching collections are in good condition. No important additions of material have been received. A microscope with accessories was purchased of Bausch and Lomb; also objectives and eye-pieces for two old stands.

Professor Ward conducted the elementary course in Meteorology (Geology B) and the two half-courses in Climatology (Geology 19 and 25) as in previous years. A new intermediate half-course in Meteorology (Geology 1) was given during the first half-year for the first time, and was taken by 12 students. One graduate student in the course in General Climatology (Geology 19), Mr. G. D. Hubbard, made a special study of the Meteorological Conditions of the Antarctic, and an abstract of his thesis was published in the *Journal of School Geography* for June, 1901, pp. 161-170. Another graduate student, Mr. R. M. Brown, undertook a study of the Effects of Climate on Railroad Construction and Operation, the results of which will also be published. The most important additions to the laboratory materials for use in the courses in Meteorology and Climatology were two large-scale colored charts, one of equal annual ranges of temperature and one of mean annual rainfall. Professor

Ward has continued his work on the English translation of Hann's *Handbuch der Klimatologie*, which will be published in 1902. Instruction in the courses in Meteorology and Climatology has been given at a considerable disadvantage in the past because of the fact that the collection of publications on these subjects in the College Library is very incomplete. This condition of things is being remedied as rapidly as possible by the purchase of the most important of the volumes hitherto lacking.

Professor J. B. Woodworth gave instruction in Courses 5, 8, 16, and 23, and in two half-courses in Elementary Geology to students enrolled in Radcliffe College. Under his direction, Mr. H. C. Boynton rearranged a large part of the reserved collection of rocks in the Geological Laboratory. He reports the addition of several specimens to the collection, notably through the gift of a series of rocks from the Vesuvian district by Mr. J. Y. Bergen. Professor Woodworth's geological investigations during the year have been conducted in New York State, and parts of Canada, and Vermont, as in the previous year, in connection with the New York State Museum. In February, Professor Woodworth, at the request of the Director of the U. S. Geological Survey, attended a meeting of the American Institute of Mining Engineers at Richmond, Va., as a delegate of the Survey. Leave of absence for this purpose was granted him by the Acting President of the University. On July 1st, Professor Woodworth was regularly appointed an Assistant Geologist of the U. S. Geological Survey, under Civil Service Rules, for such expert work as he may have time to do. During the year reports have been prepared on the triassic coals of the Atlantic slope, for the U. S. Geological Survey, and in the pleistocene geology of parts of New York for the N. Y. State Museum.

Dr. T. A. Jaggard reports that Geology 22 (Geological Field-work) has doubled its attendance from five students in 1899-1900 to ten in 1900-01. The work accomplished by the class was an accurate geological map of the Middlesex Fells, made on a large-scale topographical base of the Metropolitan Park Commission. The same plan was followed as in 1899-1900, the students mapping an area in the fall and investigating a topic in the spring. The work of this class is now definitely organized for eventual publication by the U. S. Geological Survey. An appropriation for compiling the work has been made, and the preparation of a geological folio comprising the Boston and Boston Bay quadrangles assigned to Dr. Jaggard by the Director of the Survey. Course 17 (Experimental Geology) was given to seven students. The laboratory accommodations were

extended, and the series of laboratory experiments made more systematic and thorough than heretofore. New experiments were made on erosion, joints, and deformation of strata. Mr. A. W. G. Wilson completed during the year, for publication by the Boston Society of Natural History, his work on the Geology of the Medford Dike. Mr. R. W. Stone, in Course 23, made a field experimental study of Erosion Movements in the Mystic Valley, and supplemented this in the spring by a series of laboratory experiments on erosion in miniature, which were successful. During the winter a paper on the intrusive character of the melaphyr of Brighton, by H. T. Burr, was published by the Museum of Comparative Zoölogy. Dr. Jaggar has been appointed Assistant Geologist in charge of the Bradshaw Mts. Quadrangle of Northern Arizona, the work being concerned with mapping and studying the economic geology of this copper and gold mining district for the U. S. Geological Survey.

Dr. R. A. Daly spent the summer of 1900 in a geographical and geological reconnaissance of the northeast coast of Labrador, a report of which has appeared as a Bulletin of the Museum of Comparative Zoölogy. During the first half-year, he conducted the elementary course in Physiography (Geology A) and in the second half-year the course on Oceanography (Geology 11). Dr. Daly also gave a course of lectures in Radcliffe College on the Physiography of the United States (Geology 6) which was parallel to the course in the same subject given by Professor Davis to students of Harvard University. A beginning was made on the petrographic study of the collections of volcanic island rocks from the Pacific, now systematically arranged in the Museum. In June, 1901, Dr. Daly tendered his resignation as Instructor in Geology, in order to assume the position of geologist on the Canadian Commission appointed to re-mark the boundary between the United States and Canada.

Mr. J. E. Woodman continued during the year his work upon a report on the geology of parts of Nova Scotia. Mr. H. C. Boynton, Austin Teaching Fellow in Geology, was engaged during the summer vacation in mining exploration in the region north of Lake Superior.

The Committee having in charge the Gardner Collection of Photographs (Professors Woodworth and Ward, and Dr. Daly) report that 4,875 photographs and 3,006 stereopticon views are now catalogued. The chief additions during the year were a set of Wyoming views purchased of Professor Wilbur C. Knight; 80 Austrian photographs; and a set of photographs and lantern slides donated by John L. Gardner, Jr. A friend of the department gave \$100, by means of which a large series of Norwegian photographs was added to the

collection. The Committee wishes to take this opportunity to express its peculiar indebtedness to Dr. Haus Reusch of Christiania, late Sturgis-Hooper Professor of Geology, for valuable assistance in obtaining these photographs. Mr. J. E. Woodman was employed to catalogue and care for the collection.

The following Publications by Officers of the Department were issued during the year.

By W. M. DAVIS:—

Notes on the Colorado Cañon District, *Amer. Journ. Sci.*, x, 1900, pp. 251-259.

An Excursion to the Grand Cañon of the Colorado. *Bull. Mus. Com. Zool.*, xxxviii, 1901, pp. 107-201.

An Excursion in Bosnia, Herzegovina, and Dalmatia. *Bull. Geogr. Soc. Phila.*, iii, 1901, pp. 21-50.

The Geographical Cycle. *Verh.* vii, *Internat. Geogr. Kong.* Berlin, 1900, 11, pp. 221-231.

Physical Geography in the High School. *School Review*, viii, 1900, pp. 388-404; 449-456.

Practical Exercises in Physical Geography. *Proc. v, Ann. Conf. N. Y. State Teachers and Science Teachers Assoc.*, 1901.

The Causes of Rainfall. *Journ. N. E. Water Works Assoc.*, xv, 1901, pp. 338-350.

Geographical Bibliography for the United States. *Ann. de Geogr.*, x, *Bibl. Geogr. Annuelle*, 1900.

Current Notes on Physiography. *Science*.

By R. DEC. WARD:—

Current Notes on Meteorology in *Science* throughout the year. Reviews in *Science*, *Journal of School Geography*, and *Harvard Graduates' Magazine*.

By J. B. WOODWORTH:—

Original Micaceous Cross-Banding of Strata by Current Action. *Amer. Geol.*, xxvii, 1901, pp. 281-283.

By T. A. JAGGAR, JR.:—

The Laccoliths of the Black Hills; with a chapter on Experiments in Intrusion and Erosion by Ernest Howe. *Twenty-first Annual Report Director U. S. Geological Survey*, 1901. Part III, pp. 163-303.

By R. A. DALY:—

The Physiography of Acadia. *Bull. Mus. Comp. Zool.*, Vol. xxxviii, March, 1901, pp. 73-104, 11 plates.

Notes on Oceanography. *Science*. Nov. 2, 1900, and June 14, 1901.

ROBERT DEC. WARD, *Chairman*.



## THE PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY AND ETHNOLOGY.

TO THE PRESIDENT OF THE UNIVERSITY :—

SIR,—In making my report on the progress of the Museum during the past year, I am glad of the opportunity to acknowledge the many far-reaching and important results in American Archaeology that have accrued to the benefit of the Museum through the Fund for the Encouragement of Mexican and Central American Research. This Fund, which is maintained by the yearly contributions of a few generous patrons, has enabled the Museum to carry on research in various sections of Yucatan and Central America for twelve years. During the past year we have continued the work of Mr. Thompson in Yucatan; of Mr. Maler in the Usumasinta (or Usumatsintla) Valley, partly in Mexico and partly in Guatemala; and of Mr. Gordon in Copan and Quirigua. In addition to these expeditions the Fund has furnished the means for publishing a series of illustrated quarto memoirs, thus making known some of the important results of the several expeditions. We are just issuing the latest of these memoirs, Vol. II, No. 1, under the title, "Researches in the Central Portion of the Usumatsintla Valley," by Teobert Maler. This work includes Mr. Maler's report on his researches at La Reforma, Chinikibá, Cháncala, Xupá, Pethá, and Piedras Negras, and contains his map of the Central Usumasinta Valley and his plan of the hitherto unknown ruins at Piedras Negras. This memoir is illustrated by thirty-one heliotype plates from photographs and by several figures in the text. The memoir also includes a description of Mr. Maler's meeting with the little known Lacandon Indians of Lake Pethá.

By means of this Fund we have also published Mrs. Nuttall's work on "The Fundamental Principles of Old and New World Civilizations," as Vol. II of the Museum Papers. This instructive comparative research is based on the results of Mrs. Nuttall's study, for thirteen years, of the ancient Mexican religious, sociological, and calendrical systems. Having determined the astronomical origin of the swastika in Mexico, the author was led to make researches along the same lines in the Old World, and following one ancient civilization to another, she finds in connection with the swastika a certain phase of culture based on pole star worship, and having the quadruple

organization in the cosmos and in the plan of earthly government. In other words, the swastika is used as a symbol of the Four Quarters, and of the stable central Power "whose rule extended in four directions and controlled the entire Heaven"; in these same ancient Old World cultures the cities are divided into four parts, the population into four tribes, and all are under the control of one central ruler. In each case the pole star is worshiped as the divine, central, stable Power.

One of the important deductions that the author is led to make from her comparative study is in relation to the origin of certain phases of ancient culture in the New World. Although refraining from any theories on a subject which is now being so widely investigated, she nevertheless ventures to make the following statement in her summary of conclusions: "It will seem that the outcome of my researches corroborates the opinions differently expressed by a long line of eminent investigators, who have been constantly discovering and pointing out undeniable similarities and identities between the civilizations of both hemispheres." The book contains also valuable material for a comparative study of religious symbolism. The Museum is indebted to Mrs. Nuttall for the gift of her work, which embodies the results of so many years of scholarly research.

During the past year, Mrs. Nuttall has also been engaged in writing the Preface to the long-lost Mexican Codex which she has brought to light. A facsimile of this Codex has been reproduced by the Museum under the special supervision of Mrs. Nuttall, and it will be known as the Codex Nuttall. The Museum, through this Research Fund, will therefore add one more to the nine Mexican codices already known.

Mr. Gordon, after his return from Copan in the summer of 1900, was engaged in work on the specimens collected until November 5, when he again started for Copan, where he opened a number of mounds situated about two miles northeast of the main ruins. Mr. Gordon describes these mounds as being made of rough stones and earth, covering stone-built tombs. Many of these tombs were carefully made of squared stones; in some the roof being formed by the  $\wedge$ -shaped arch, and in others by flat stones resting on the vertical sides of the tomb; in still others the tomb was formed by flat stones so placed as to form a rude  $\wedge$ -shaped structure. Only traces of human skeletons and fragments of disintegrated and rude pottery were found. Leaving Copan, early in January, Mr. Gordon went to Quirigua, in Guatemala, where he secured moulds of six stelae and six altars and monolithic sculptures which had not been moulded

on former expeditions. He also took a full series of photographs of these sculptures. He made excavations under the fallen stelae to ascertain if they were built over cruciform structures similar to those found under some of the stelae at Copan; but none were found, and it is probable that the stelae at Quirigua were simply set into the ground.

Quirigua is on a flat plain, subject to inundations, and in places there is now a deposit of sand and gravel four feet in depth, covering the site of the ruins. These floods have also undermined the large stelae, some of which have fallen and others are leaning in a north-easterly direction, showing the course of the flood channels. It will be remembered that the largest monolithic sculptures known in America are found at this site. With the exception of two of the largest, which were moulded by Maudslay, the Museum now has the moulds of all the remarkable sculptures now remaining on this prehistoric site.

Mr. Gordon returned to Cambridge in June and has since been engaged in preparing a report on the Hieroglyphic Stairway at Copan, which will soon be issued as one of the series of Memoirs by the Museum. While in Guatemala, Mr. Gordon made a collection illustrating Indian arts and customs, and also secured a large collection of photographs of Indians.

Mr. Edward H. Thompson has completed his examination of the ruins at Chacmultun, from which place he has sent photographs and moulds and copies of mural paintings. Continuing his researches at Chichen Itza, he has found in the debris of the fallen portion of the Temple of the Tigers many of the missing stones from the sculptured room, by means of which he hopes to complete the restoration of a portion of the wall which fell long before it was described by Stevens. He has sent moulds of several of the colored caryatid-like sculptures found at this ruin. These we have had cast and colored like the originals. He has also sent moulds and photographs of other sculptures, including two hieroglyphic inscriptions which are of special interest since comparatively few hieroglyphs have been found at Chichen Itza. Mr. Thompson is now engaged in preparing his report on the ruins of Chacmultun. He has also sent to the Museum a paper on the manufacture of pottery by the present Maya Indians, comparing the method and materials with those of past times. It is accompanied by a series of photographs of the several processes of pottery making employed by the Mayas, and by a series of specimens of the materials used. This paper and also Mr. Thompson's report on his researches among the ruins of Chacmultun will be published by the Museum.

During the year the moulds sent by Mr. Thompson and Mr. Maler have been cast, as well as a few of those from Copan made by Mr. Gordon. Owing to lack of space to place the casts of the large sculptures of Quirigua and of the great Hieroglyphic Stairway of Copan, we are obliged to store these valuable moulds until the room is provided by the hoped-for completion of the Museum building.

The following are the subscribers, for the past year, to the Fund for the Encouragement of Mexican and Central American Research:—

Stephen Salisbury, Charles P. Bowditch, Augustus Hemenway, Francis C. Lowell, Mr. and Mrs. Henry Pickering, Miss Ellen F. Mason, Edward S. Grew, Mrs. G. G. Lowell, George A. Nickerson, Nathaniel Thayer, Elliot C. Lee, Miss Mary L. Ware, and Miss Caroline P. Stokes.

Miss Alice C. Fletcher, as holder of the Thaw Fellowship, has continued her studies on the Omaha and Ponka Indian ceremonies. An extended paper relating to the Omahas is soon to be published, with the permission of the Museum, by the Bureau of American Ethnology at Washington.

By the kind assistance of Mr. Bowditch, I was able to take with me to New Mexico Mr. A. M. Tozzer (A.B. 1900)—Winthrop Scholar and graduate student in this department—and to start him in the study of the language and ceremonies of the Navajos. Mr. Tozzer was with the Navajos from August 6 to November 20, when he returned to Cambridge. During this time he witnessed several ceremonies and, mixing freely with the Indians, met with considerable success in his study of the language.

The income of the Henry Warren Fund was devoted to an exploration of ancient ruins in New Mexico, where I left Mr. W. C. Farabee (A.M. 1900)—Hemenway Fellow and graduate student in this department—to carry on the work for two months. Mr. Farabee was thus able to examine a number of the ruined pueblos on the mesas and in the cañons, and to explore a small ruin with its adjacent burial place. For many courtesies and much assistance, while in New Mexico, we are greatly indebted to the Hyde Exploring Expedition, which is doing so much in a practical way for the welfare of the Navajo Indians. Mr. Farabee has been appointed Austin Teaching Fellow for the year 1901-02, and has taken part in the instruction in Course 1.

With the assistance of the income of the Huntington-Frothingham-Wolcott Fund for the past year, I was able to continue my researches in California in relation to the antiquity of man on the Pacific Coast. Visiting Calaveras and Toulumne counties, I examined several caves

and also a number of old mining shafts and tunnels, during a part of the time in company with Professor Merriam, of the University of California, who is familiar with the more recent geological formations of the state. Many important facts in relation to the auriferous gravels and later deposits were observed, and plans were formed for a thorough investigation in order to answer the question, When did man first appear in California? Mrs. Phoebe A. Hearst, at my suggestion, has generously provided the means for continuing this most important investigation for five years in connection with the work of the Department of Anthropology of the University of California. This Department was organized while I was in the state, and an advisory committee, of which I have the honor of being Chairman, was appointed by the Regents of the University. Before leaving the state I accepted an invitation from the University to give a brief address on the plan and objects of the new Department; and Miss Fletcher and Mrs. Nuttall, also of the advisory committee, gave lectures pertaining to their respective lines of research.

During my trip I was able to secure for the Museum a number of archaeological specimens and human bones from various places, for comparative study; also a small collection of baskets and other objects from the Indians living in Calaveras County, and from the Apache and Navajo tribes of Arizona and New Mexico.

Dr. Charles Peabody (Ph.D. 1893), a graduate student in the Department, kindly undertook on his own account to equip an expedition for archaeological exploration in Mississippi, in May and June last. Mr. Farabee accompanied Dr. Peabody on the expedition, and two large mounds were explored. Human skeletons, stone implements, pottery, and other objects were obtained, and Dr. Peabody is now making a study of the material preparatory to writing a report on the results of the expedition.

Dr. Roland B. Dixon (A.B. 1897), who was Assistant in Anthropology and is now Instructor in Anthropology, was absent from the Department during the past year. From August, 1900, to January, 1901, Dr. Dixon continued his studies of the languages of the Indians of the Northern Sierras in California, under the direction of Dr. Boas of the American Museum of Natural History. The months of February and May he spent in Berlin, studying the collections in the Museum für Völkerkunde, especially the Pacific Coast and Polynesian material. From May to September he was travelling in Northern Mongolia and in Siberia, south of Lake Baikal, on the Yenesei River, and in the Altai mountains. During this trip Dr. Dixon made an arrangement with several museums in Siberia for an exchange of specimens with our Museum.

Mr. H. M. Huxley (A.B. 1899) was a student in the Department in 1898-99. In January, 1900, he joined, as anthropologist, the Syrian Expedition under the charge of Mr. H. C. Butler, in order to study the Syrians and their origin. On the return of the other members of the expedition in June, 1900, Mr. Huxley continued his researches under the patronage of Mr. B. T. B. Hyde, remaining for a time at a small village in the Lebanon, where he learned the colloquial Arabic and collected a number of stories and songs in the vernacular. He afterward travelled through Central and Northern Syria. His final trip was from Beirut to Banyás and the region east of the Jordan, where he studied the ruins, reaching Petra as his most southern point. Crossing the Ghôr south of the Dead Sea, he returned to Beirut through Western Palestine, and reached this country in July last. He has renewed his connection with the Department as a graduate student, and has been appointed Assistant in Anthropology and Hemenway Fellow for the year 1901-02. Mr. Huxley is now engaged in preparing a report on the physical characteristics of the native peoples as determined from the measurements, photographs, facial moulds and skulls secured on the expedition.

In March last, Dr. Frank Russell (A.B. 1896), Instructor in Anthropology, was obliged to depart suddenly for Arizona for the benefit of his health. He has since been appointed field assistant of the Bureau of American Ethnology, and I am thankful to state that the out-of-door life he is leading has proved most beneficial.

Instruction is now being given in the department by the Peabody Professor, and by Drs. Woods and Dixon, Instructors in Anthropology, Mr. Farabee, Austin Teaching Fellow, and Mr. Huxley, Assistant in Anthropology and Hemenway Fellow.

The library has been increased by the addition of 418 volumes and 130 pamphlets during the year, and now contains 5,249 volumes and pamphlets, including the current anthropological journals, and the publications of anthropological societies and museums from all parts of the world, secured by exchange for our own publications. The Museum of Comparative Zoölogy has recently transferred from its library to that of the Peabody Museum 215 volumes, pamphlets, and serials relating to anthropology, which, with the selected volumes recently received from the estates of Mrs. Mary Hemenway, Professor Josiah D. Whitney, and Librarian Justin Winsor, have added much to the importance of the library. Dr. Alexander Agassiz has also deposited in the library several valuable albums of native peoples of various countries. The Duke of Loubat has given us a copy of his reproduction of the Codex Fejervary-Mayer, the sixth ancient

Mexican Codex which he has reproduced and distributed. He has also sent us a copy of a reproduction of an old Mexican manuscript, "The Tonalamatl of the Aubin Collection," with introduction and explanatory text by Edouard Seler. This work was first published in German, and later we received the same in English. Thirty-eight other individuals have made gifts to the library.

The following friends have made gifts to the Museum during the year ending September last: Mr. Samuel Garman, Mr. E. A. Morley, Lieut. S. E. Woodworth, U.S.N., Mr. A. C. Vroman, Dr. Frank Russell, Mr. George W. Nash, Mr. Alfred M. Tozzer, Mrs. Asa Gray, Miss Abby L. Alger, Dr. W. McM. Woodworth, Mr. George B. Frazar, Mr. George U. S. Hovey, Mr. C. B. Moore (this gift contains specimens of a new type of pottery from Florida, which is figured and described in his latest memoir on the Archaeology of the Southern Atlantic States), Mr. W. M. MacVicar, Mrs. Zelia Nuttall, the heirs of Mr. Charles Beck, Dr. Roland Steiner, Dr. Alexander Agassiz, and also from the Museum of Comparative Zoölogy. We have also received the valuable gift from the American Exploration Society, through its President, Calvin Wells, Esq., and its Secretary, Mrs. Cornelius Stevenson, of a large Etruscan sarcophagus with the reclining figure of a woman and an inscription. This is one of eight sarcophagi from a tomb in the necropolis of the ancient city of Masarna, Viterbo, Italy.

By purchase we have added a small but important lot of stone images, carvings of faces in stone, beads and other objects collected in Mexico about fifty years ago.

The numerous objects that have been added during the year have all been catalogued by Mr. Willoughby, and, when possible, placed on exhibition. Mr. Willoughby has made many improvements in the arrangement of several collections, and he has prepared a number of maps and labels, such as we hope, in time, to have in all the cases. He has also made a card catalogue of all the negatives, and of the photographs, so that these valuable adjuncts to research can be readily consulted; and he is following the same method in arranging and recording all specimens not on exhibition. To care for the constantly increasing material in the present inadequate space of the Museum requires much patient labor, and in Mr. Willoughby I have an earnest and conscientious assistant.

In my last report a statement was made relating to the transfer of the Serpent Mound Park to the Ohio State Archaeological and Historical Society. It is gratifying to know that this Society has appointed a custodian, who has a house adjoining the park. We

have received notice that the monument to be erected near the Serpent Mound will bear the following inscription : —

THE SERPENT MOUND PARK

THE SERPENT MOUND WAS FIRST DESCRIBED BY SQUIER AND DAVIS IN  
 " ANCIENT MONUMENTS OF THE MISSISSIPPI VALLEY " 1848  
 SAVED FROM DESTRUCTION IN 1885 BY  
 FREDERIC WARD PUTNAM  
 PROFESSOR OF AMERICAN ARCHAEOLOGY AND ETHNOLOGY  
 HARVARD UNIVERSITY  
 THE LAND INCLUDED IN THE PARK  
 WAS SECURED BY SUBSCRIPTIONS OBTAINED BY LADIES OF BOSTON  
 IN 1887 WHEN IT WAS DEEDED TO THE TRUSTEES OF  
 THE PEABODY MUSEUM OF HARVARD UNIVERSITY CAMBRIDGE  
 MASSACHUSETTS  
 EXEMPTED FROM TAXATION BY ACT OF LEGISLATURE  
 OF OHIO IN 1888  
 TRANSFERRED BY HARVARD UNIVERSITY MAY 1900 TO THE  
 OHIO STATE ARCHAEOLOGICAL AND HISTORICAL SOCIETY  
 FOR PERPETUAL CARE  
 AS A  
 FREE PUBLIC PARK

The bequest of \$10,000 from the late Roger Wolcott, to be added to the Huntington-Frothingham-Wolcott Fund which he established in 1891 in memory of his brother, is another instance of the interest he always took in the Museum.

In previous reports I have referred to the invaluable collections contained in the Museum, and to the over-crowding of all its halls and work-rooms. While this condition is the best evidence of the successful growth of the Museum, it makes it all the more imperative that the remainder of the building should be erected as soon as possible. An estimate made for the completion of the building, which would double its present size, is \$150,000. In addition to this sum, the permanent funds of the Museum should be increased by an equal amount in order to provide for salaries and for the current expenses.

With the increasing interest in archaeological and ethnological research, in all parts of the country, it seems hardly possible that this, the first museum to be founded in this country purely for anthropology, and one that has taken such an important part in the development and encouragement of anthropological research, should be allowed to fall behind.

F. W. PUTNAM,  
*Peabody Professor and Curator of the Museum.*



## THE SEMITIC MUSEUM.

TO THE PRESIDENT OF THE UNIVERSITY :—

SIR,—The matter of chief interest during the past year has been the erection of the Semitic Building. The hope that the Building might be completed during the summer of 1901 has not been realized. This is due to certain unavoidable delays, especially to the difficulty at times in getting building materials promptly. It now seems probable that the work may be completed by the middle of the current academic year, so that the Semitic Library and the instruction may then be moved into the new quarters. The collections of the Museum, however, owing to the absence of the Curator, will have to remain where they are until the summer of 1902. This delay is a matter for regret, but it has one distinct advantage: the objects bought for the Museum during the current year can be more easily incorporated with the existing collections at the time of removal than could be done later. This enlarged exhibit will also be more attractive and instructive.

Until June, 1901, no provision had been made for supplying the new Building with cabinets, furniture, library conveniences, etc. In that month Mr. Jacob H. Schiff, founder of the Museum and donor of the Building, generously gave \$10,000 toward the object named, thus again manifesting his wise interest in this important undertaking.

During the past year four glass vases from Syria have been added to the collections by purchase. The other additions have been by gift.

From Mr. Max Benshimol and other members of his family we have received a fine large brass platter, adorned with Biblical scenes and a Hebrew inscription.

The Egypt Exploration Fund of London sent us nineteen fragments from Egypt of papyri with Greek inscriptions. These date from the early centuries of the Christian era. One contains the first seven verses of Paul's Letter to the Romans. Two are extracts from Greek poets (Homer, Alcman). The others are of a commercial character, relating to contracts, etc.

To the generosity of Mr. Theodore M. Davis, of Newport, we owe the gift of a handsome mummy-case from Egypt.

These valuable and interesting gifts from Mr. Davis and the Exploration Fund raise the question whether the time has not come for the Semitic Museum to undertake Egyptian exploration on its own account. There are several obvious reasons why this should be done.

1. The intimate relations of Egypt with the Semitic world, extending over a period of many centuries.
2. The certainty that a well planned and vigorous expedition, covering a period of several years, will bring to light many of the treasures still lying beneath the soil of Egypt.
3. The generous attitude of the Egyptian government in granting permission to dig, and in allowing the explorer to own a large part of what he may find.
4. The great activity now displayed in this work by European governments and learned societies, and by at least two of the American Universities.
5. The fact that the chances for success in this field, owing to the great present activity, are decreasing with each passing year.

What can be done in this field is well illustrated by the excellent work carried on for the past two years for the University of California by two Harvard graduates (Messrs. Reisner and Lythgoe). The manuscripts, pottery, personal ornaments, and other objects unearthed by this expedition are sufficient to form a considerable museum.

Nor does Egyptian exploration appeal by any means exclusively to students of Egyptian and Semitic antiquity. It is of very great interest to Classical scholars, as is evident from the thousands of Greek papyri now owned in Oxford, in Berlin, and by the University of California.

What we need in order to begin the work for Harvard is a sum of at least \$10,000 a year for not less than five years. With this amount we could not fail to enrich our Museum with important additions, and we should at the same time certainly make valuable contributions to knowledge. The cost of the work for the University of California is borne by one public-spirited woman. Would that some friend, or friends, might be moved to do a similar service for Harvard!

There are still other fields, more strictly Semitic, which invite exploration. These lie mostly within the borders of the Turkish Empire. Here the conditions imposed by the government are not so favorable as in Egypt. The Turkish law, like the Greek, forbids the

exploration of antiquities, claiming all for the Imperial Museum at Constantinople; but that this law is generously administered may be seen from the large numbers of important objects at the British Museum, the Louvre, the Berlin Museum, and the University of Pennsylvania.

One of the Turkish fields is Babylonia-Assyria. Hence have come the most impressive of all Semitic discoveries. Here European museums have long been at work. The successes of the University of Pennsylvania during the past decade are a matter of common knowledge. A Babylonian expedition led by a Harvard graduate has recently been organized in the interest of the Smithsonian Institution.

That Harvard should also enter this field has long been the earnest wish of the Semitic Department. Many of the most instructive objects in our Museum are plaster casts from Assyrian monuments in the Museums of Europe. But such casts can now rarely be had, except in cases where moulds already exist, the curators of the museums having learned by experience that the originals are damaged by the process of making moulds. Any considerable addition to the Babylonian-Assyrian section of our Museum must, therefore, come from independent exploration.

But there is yet another Semitic field which invites us more strongly than any other. This is Syria, and more particularly, Palestine. Here lived the most influential of all the Semitic peoples, and here was written the most important of all books. Here, too, strange to say, but a small amount of exploration has been done, so little, indeed, that no one can prophesy what the results of thorough excavation might be. One thing, however, can be said with certainty: the land of Palestine is so important in the history of the world that even small results in the number of objects found would repay large expenditure of time and money. In view of the numerous attractive sites which invite the spade, it seems astonishing that so little excavation has been undertaken in Palestine.

We by no means overlook or disparage the work of the Palestine Exploration Fund. It has made very great contributions to our knowledge of the geography of the land, and has conducted successful excavations; but, chiefly from lack of money, these last have been on an inadequate scale. Nor do we forget the recent establishment in Palestine of an American School of Archaeology. This undertaking, set on foot mainly through the labors of Professor J. Henry Thayer, of Harvard, is full of hope. But it is not

probable that this School will be able to undertake digging on a large scale for a long time to come, and even if this could be done, the interests of the School and those of a Harvard expedition would in no wise conflict. There is room for many exploring parties.

In the lands bordering on Palestine remarkable discoveries have been made, chiefly of the Graeco-Roman period. Important objects of the same nature undoubtedly lie beneath the soil of Palestine proper, and these are of great value. Excavation will also tell us much of the history of the country before it became the home of the Hebrews. But the objects most worthy of search are the remains coming from the Hebrew occupation of the land. That Harvard should take part in this comparatively new research is greatly to be wished. While she is sending out her sons to do such good service for other institutions, shall she not enrich her own stores and increase her lustre by sending others of her sons on similar missions of discovery?

What we need to this end is money enough to plan a campaign covering several years. In this campaign we should hope for a good reward in the number and character of the objects found. But even if we should find little, it would be no small satisfaction to have made a well-considered, continued effort to unearth the memorials of a people so important in the history of the human race. The results of this work will be of deep interest to multitudes. From the nature of the case, we must look to the few for the means. When the Semitic Museum is adequately endowed, it will be equipped for such undertakings. Till then we must rely on the generous coöperation of the friends of learning.

D. G. LYON, *Curator.*

ROME, November 16, 1901.

## THE FOGG ART MUSEUM.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,— I have the honor to present the following report on the Fogg Art Museum for the year 1900–01.

We have received from members of the Class of 1895 the important gift of a marble statue, which is an original work of later Greek sculpture of high character. It appears to be an Aphrodite, and closely resembles the so-called Venus of Milo, though it is on a smaller scale. The pose of the figure is almost exactly the same, and the likeness extends to the disposition of the drapery, which, however, is cast in the opposite direction. The head, right arm, left forearm including the elbow, and the feet are wanting; but in other respects the figure is for the most part in remarkably good condition. The modelling of the body is extremely refined and beautiful, and the surfaces, save in a few small spots, are practically uninjured.

Our generous benefactor, Mr. Edward W. Forbes, '95, has added to the valuable collection of original works deposited by him as an indefinite loan, a large panel triptych in tempera of the Italian school of the fifteenth century, representing the Madonna and Child surrounded by angels and cherubs, with a St. Sebastian on one wing and a St. Francis on the other; and a small Holy Family of the sixteenth century in oil color, which has the characteristics of the works of Correggio. The triptych is in good condition, save for the rubbing off of the thinner carnations in some places, an injury which many Italian tempera paintings have suffered from the repeated cleanings by unskilful hands to which they have been subjected. But the work has suffered little from the more serious damage of attempts at restoration by repainting. The smaller work is entirely free from injury of any kind, except a slight cracking of the *gesso* ground due to contraction and expansion of the panel.

We have also received as a gift from Mr. Charles Fairfax Murray of London, an Ionian Greek vase of the seventh century B.C.; from Professor C. E. Norton, a drawing after Michael Angelo by Brennourry, and from Mr. Edward Robinson, a print showing a conjectural restoration of the pediment sculptures of the temple of Zeus at Olympia.

The Department of Fine Arts has acquired, and deposited in the Museum, a lead-pencil and wash drawing of Chamouni by John Ruskin, — a work of the “Modern Painters” epoch, which was his strongest time as a draughtsman.

We have acquired by purchase seventeen electrotype reproductions of objects of Mycenaean art, and two electrotypes of the well known Vaphio cups.

But few additions have been made during the year to the collections of prints and photographs. The accessions to the Gray Collection comprise the following prints: Of the so-called Baldini-Botticelli plates, the Dante attacked by Wild Beasts, from the series of illustrations to the *Divina Commedia*, published in Florence in the year 1481 (this print is the most rare one of the series, and is of great value as an example of the primitive line engraving of Italy); four etchings of the Port of Leghorn, by Stefano della Bella, a Florentine engraver of the seventeenth century; a portrait of Pieter Forestus by Goltzius; Pope Aeneas Sylvius Piccolomini, a wood-cut by Michael Wolgemut; and two prints of Turner’s *Liber Studiorum*: the *Via Mala* in the etched state, a rare print, and the *Stork and Aqueduct* (one of the unpublished plates of the series), an impression from the re-mezzotinted plate. To the Randall Collection but one addition has been made, namely, a chromolithograph of a scene from *Pilgrim’s Progress*, published by Goupil & Co., a gift from Mr. Howard Payson Arnold.

Eight hundred and fifty-eight photographs have been purchased during the year, comprising representations of Greek sculpture, Roman architecture, Roman statues and portrait busts, Egyptian sculpture, Indian sculpture, French painting, Flemish painting, architecture of the Netherlands (Mediaeval, Renaissance, and Modern), sculpture of the Netherlands, French architecture and sculpture (Mediaeval, Renaissance, and Modern), Mediaeval architecture of Spain, architecture and sculpture of the Italian Renaissance, Scandinavian sculpture, and modern English architecture, including the churches of Sir Christopher Wren.

To the collection of slides 266 additions have been made.

To the library of the print collections we have added the work in four volumes by Charles Le Blanc entitled “*Manuel de l’amateur d’estamps*”; and to our small Museum collection of books have been added the following works: “*I freschi delle loggie Vaticane*” after Raphael, given by Mrs. G. W. Wales; Ruskin’s “*Notes on his Drawings by Turner*,” and Schnaase’s “*Geschichte d. bildenden Kunst im Mittelalter*” (Vols. 2 and 3), given by Professor C. E.

Norton, and Ameling's "Führer durch d. Antiken in Florenz," acquired by purchase. The cataloguing of photographs and slides has kept pace with accessions, and the following subject lists have been made: Greek and Roman sculpture by galleries, Old Testament subjects in painting, and a list of gardens. Separate numbers have been given to all photographs in the ancient and modern groups, 1,437 photographs of the collection belonging to the Fine Arts Department have been accessioned and separately numbered, and to our list of photographs classified by painters dates have been added.

Our annual summer examination of the cases found every photograph in its place, or accounted for.

Photographs of the original works of art in the Museum are now kept on sale. The sales of these have thus far not been large, but they will doubtless increase when the fact that they are obtainable becomes better known.

As our facilities for mounting and remounting prints and photographs have to be maintained, though our accessions are now insufficient to keep our workshop fully employed, we have undertaken to do such work for the Department of Architecture, the Library, and other departments of the University.

The number of photographs mounted for the Museum during the year was 1,102.

The number of visits for access to photographs in the cases was 1,462. Of these 1,148 were by members of the University.

The number of visits to the Print Department for the examination of prints not displayed on the walls was 169. Of these 98 were by men, 71 by women, and 83 by members of Harvard University.

The work of cataloguing the Randall Collection is necessarily slow, as the prints have in all cases to be carefully examined and their states determined, — which involves much consultation of authorities and comparison with prints in the Gray Collection. As the catalogue of this collection by engravers progresses, a temporary card catalogue by designers and a temporary subject list are carried on.

The number of prints mounted during the year was 1,284.

Members of the University hardly as yet realize what an opportunity is afforded by our superb print collections. The Gray and Randall collections together afford materials for the thorough study of engraving from its earliest beginnings and in all of its varieties. These collections include a considerable number of rare and costly prints such as are, in many cases, to be seen elsewhere only in the largest public collections of Europe. Since the introduction of

photography as a means of illustrating works of art, the general interest in engraving as a means of reproduction has naturally declined. But the finest engraving is not of the reproductive kind. Engraving has been extensively practiced, as an original means of expression, by some of the greatest masters of design. Our collections are rich in the original works of such masters. But even modern reproductive engraving has often, in its best phases, qualities that give it a high independent value; and thus, from whatever point of view it may be regarded, the importance of engraving as a mode of artistic expression must always be great.

Our more important new accessions are not only original works of great schools of art, but most of them are really fine examples. Such excellent pieces of early Italian painting as the Siennese Madonna, the Foligno triptych, and the small Florentine Tabernacolo, have hardly before been brought into the country. These works, together with our unique Meleager, the Aphrodite statue, and the choicer treasures of the print collections, give our Museum a high character already. But these acquisitions make us feel increasingly the need of such alterations in the building, or additions to it, as may afford a suitable light for their display. It is entirely correct to say that our paintings cannot now be seen at all in any proper sense. Their use to us, therefore, for purposes of instruction, is greatly diminished. In my last report I suggested that the form of the roof might be changed so as to give us the needed light. But the space on our upper floor is very limited, and will not exceed that which will be needed for prints and photographs. I would therefore now suggest that the upper floor be kept as it is, and used for the storage of prints and photographs exclusively, while a suitable gallery, contiguous to the present building, and connected with it by a short passageway, be constructed. Such a gallery might be placed on the east side, toward the new Architectural building, and have an eastern entrance which would give the Department of Architecture more convenient access to our collections, for which it has felt the need. Such an addition might easily be made to harmonize with our own building and with that of the Architectural Department. The cost of it need not be large, and it would greatly enhance the working value of our growing collection of paintings.

The need of larger resources is great. Our Museum is already performing an important function in the University, and if a healthy growth is to be maintained, which shall enable us to meet the needs of an increasing number of students, more ample endowments are imperative. We need more money, not only to build up a working



collection of original works of past schools, the difficulty and cost of obtaining which increases from year to year, but also to fill the gaps in our collection of photographs. There can be no limit to the desirable growth of this collection of authentic documents illustrating the history of the Fine Arts in all ages, to which we have lately been able to make but few additions. The greater part of our present income from all sources still has to be devoted to the cost of administration, and to the care, and the heating and lighting of the building.

CHARLES H. MOORE, *Director.*

## MINERALOGICAL MUSEUM AND LABORATORIES OF MINERALOGY AND PETROGRAPHY.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—The courses of study in the Department of Mineralogy and Petrography had an increased attendance during the year 1900–01, amounting in all to one hundred students, and including two candidates for the degree of Ph.D. Mr. Ernest Howe received this degree in June, presenting as his thesis: The pre-Cambrian intrusive rocks of the Animas Cañon, Colorado.

Dr. Eakle was appointed Instructor in Mineralogy at the University of California, and Dr. Edwin C. E. Lord became Austin Teaching Fellow for the year. During the summer Dr. Palache was engaged in field-work in Arizona, and the Curator in Vermont. Mr. Prindle, a candidate for the degree of Ph.D., successfully explored and mapped for his thesis, *without a companion*, the La Sal mountain range in Utah. The Curator has edited the department of American Petrography for the new *Geologisches Centralblatt*.

The following papers were published:—

Notes on Tellurides from Colorado (Sylvanite from Cripple Creek; Crystallographic identity of Goldschmidite and Sylvanite; Hessite crystals from Colorado), by CHARLES PALACHE. *Am. Journ. Sci.*, Vol. X, pp. 419–427. (Also in German in the *Zeit. für Krystallographie*.)

Geology and Petrography of Monhegan Island, Maine, by E. C. E. LORD. *Am. Geol.*, Vol. XXVI, pp. 329–347.

The collections of minerals and rocks remained nearly stationary, owing to a lack of funds for purchase and to the small number of gifts received. Mr. W. A. Bentley, of Nashville, Vt., added about 100 new microphotographs of snow crystals to the large collection made by him and now exhibited on the walls of the Museum. Dr. Palache has installed, in glass cases in the lecture-room, a lecture collection of minerals, which has been made up from duplicates and new acquisitions, and which provides better material for illustrative purposes than can ordinarily be placed in students' hands.

JOHN E. WOLFF, *Curator*.

## RADCLIFFE COLLEGE.

TO THE PRESIDENT OF THE UNIVERSITY: —

SIR, — I have the honor to present my report on the condition of Radcliffe College during the academic year 1900–01.

The number of students in actual attendance during the year was 457, as against 407 during the preceding year.

Graduate Students . . . . .	54
Seniors . . . . .	63
Juniors . . . . .	57
Sophomores . . . . .	81
Freshmen . . . . .	71
Special Students . . . . .	132
Total . . . . .	457

At the Commencement in June, 1901, seventy-four students, five of whom had not been in residence during 1900–01, received the degree of A.B. Eleven students, who had not been registered as Seniors, received the degree, and four, who had been so registered, failed to receive it. One of the four was prevented by illness from completing her work. Of the seventy-four successful candidates, two received the degree *summa cum laude*; twenty-four received it *magna cum laude*; twenty-five *cum laude*.

Fourteen students received the degree of Master of Arts. Four of the fourteen had taken their first degree at Radcliffe; the others represented the following colleges: Colby College, University of Michigan, Smith College, Vassar College, Wellesley College, College for Women of Western Reserve University.

Examinations for admission were held in June, 1901, in Cambridge and New York; in Buffalo, Cincinnati, Denver, Louisville, Portland (Me.), Quincy, South Byfield, Springfield, Washington (Conn.), Worcester, and Youngstown (O.). They were also held in September in Cambridge. Three hundred and twenty-one candidates presented themselves for examination. Fourteen were candidates for admission as special students; fifty-six candidates took part of the examination or worked off admission conditions; three candidates were examined for advanced standing; one hundred and twenty-six candidates took the Preliminary Examinations, and one hundred and twenty-one the

Final Examinations. One Postponing candidate was rejected. The results of the Final Examinations are given in the following table:—

	Admitted.	Admitted "Clear."	Rejected.
June . . . . .	105	64	3
September . . . . .	11	1	2
Total . . . . .	116	65	5
Total rejected . . . . .	5		
	121		

One hundred and sixteen candidates were admitted as Freshmen in 1901, as against ninety-three in 1900.

Sixty-one Graduate Students registered during the year, forty-seven of whom were from other colleges. Five of the forty-seven entered the Senior Class, and four of the five received the degree of Bachelor of Arts. Two entered the Junior Class, one of whom received the degree of Bachelor of Arts. Twenty-two students were admitted to nine full courses, and twenty-nine students to eighteen half-courses of the "Courses primarily for Graduates in Harvard University open to competent students of Radcliffe College."

Sanskrit was taken . . . . .	by four students.
Classical Philology was taken . . . . .	by four students.
German was taken . . . . .	by eight students.
Germanic Philology was taken . . . . .	by six students.
History was taken . . . . .	by one student.
Government was taken . . . . .	by one student.
Philosophy was taken . . . . .	by one student.
Education and Teaching was taken . . . . .	by nineteen students.
Mathematics was taken . . . . .	by four students.
Geology was taken . . . . .	by two students.
Archaeology was taken . . . . .	by one student.

The number of courses offered in 1900–01 was 192½; they were offered by 114 professors and instructors in Harvard University.

The members of the Academic Board for 1900–01 were: Professors Byerly (*Chairman*), Warren, Mark, Wright, Macvane, Hall, von Jagemann, Grandgent, and Kittredge, and the President and the Dean of Radcliffe College.

At the Associates' Meeting in February, 1901, Mr. John Farwell Moors, of Boston, was elected a member of the Council of Radcliffe College, to fill the unexpired term of Mr. J. B. Warner.

The Sargent Prize, offered for the best metrical translation of an ode of Horace, and open to competition by the students of Harvard and of Radcliffe College, was this year awarded to Norma Rose Waterbury, a Radcliffe Freshman.

The Caroline I. Wilby Prize was not awarded.

The great interest of the year has been the building of Bertram Hall, the dormitory given to Radcliffe by Mrs. David P. Kimball, and named by the College, with her consent, after her own family. The hall is situated on Shepard Street, on the property purchased by Radcliffe from W. Q. Phillips, as described in the Report for 1899-1900. It is a red brick building, four stories high, in the Colonial style of architecture of the "Salem type," chosen as well suited to the needs of a college hall of residence and as best representing the architectural and historical traditions of this part of New England. The ideas of the architect, Mr. A. W. Longfellow, Jr., and of the Chairman of the Committee, Mrs. Henry Whitman, have been thoroughly carried out, and the result is one of the most beautiful buildings in Cambridge, not surpassed in harmony of proportion and charm of effect by any of the College dormitories. It looks the model of a college hall of residence, and that expression, hall of residence, is used to emphasize the intention of the founder, to provide a home for twenty-five young women, who may there lead a natural, simple, healthy, and happy life, and in so doing, set a standard for the social life of women in our own college as well as in others. A college-life for young women is still an experiment, with no tradition and little experience to go by; but it seems certain that, to be a healthful life, it should be free from the artificial restraints of a convent or a boarding school, and, if it is a life natural to young women, it will be essentially different from the college-life of young men. The life in Bertram Hall will be led under the best conditions, in a delightful and beautiful home, in the atmosphere and under the many advantages of Cambridge, and there is every reason to hope that the young women, who there come together for the honorable purpose of study, will develop a type of college-life far higher than has yet been reached — a community-life adapted to their own needs, to their real interests, to their true growth and development, and to the part which they ought to take in the work of the world. For this inestimable gift to Radcliffe, with all that it means to the College and to the students, the College cannot adequately thank Mrs. Kimball, nor, above all, for the splendid generosity which, to the original promise of \$50,000, has added the large sum of \$20,000, in order that the plan might be carried out in the best possible manner.

The gifts and legacies of the year have been as follows: —

\$2,250 from the heirs of Edward Austin.

\$2,000 by the will of Barthold Schlesinger, of Brookline.

\$1,000 from a giver who withholds his name.

We were agreeably surprised to learn, in the summer of 1901, that Radcliffe College is ultimately to inherit the entire estate of Miss Susan Cabot Richardson, who died in June, 1901, and whose will was admitted to probate July 25th. The estate is valued at nearly \$200,000, and the income is at present enjoyed by two friends of Miss Richardson during their unmarried lives.

The College has also to count on a legacy of \$20,000 by the bequest of Susan W. Dabney, and these promises for the future are singularly encouraging at a time when the present is somewhat dark. The purchase of land brought about the diminution of income, and, with a diminished income, we are feeling the pinch of poverty. In the opinion of the Finance Committee, Radcliffe College should endeavor to add to its endowment an unrestricted fund of half a million dollars (\$500,000).

AGNES IRWIN, *Dean*.

# APPENDIX.

## RESIGNATIONS.

- WILLIAM JAMES ASHLEY**, Professor of Economic History, to take effect September 1, 1901.
- ROGER TROWBRIDGE ATKINSON**, Instructor in Histology and Embryology. September 24, 1901.
- CHARLES BEARDSLEY**, Proctor, to take effect September 1, 1901.
- HAROLD BISBEE**, Assistant in Chemistry, to take effect September 1, 1901.
- WILLIAM ALLEN BROOKS, Jr.**, Demonstrator of Anatomy, to take effect September 1, 1901.
- HARRISON HITCHCOCK BROWN**, Instructor in Mathematics. September 24, 1901.
- WILLIAM GARROTT BROWN**, Deputy Keeper of University Records, to take effect June 1, 1901. May 27, 1901.
- FREDERICK EDWARD CHENEY**, Assistant in Ophthalmology. June 25, 1901.
- THATCHER CLARK**, Assistant in French, to take effect September 1, 1901.
- ROBERT WHEATON COUES**, Assistant Recorder. September 24, 1901.
- REGINALD ALDORTH DALY**, Instructor in Geology. June 25, 1901.
- EDWIN WELLES DWIGHT**, Assistant in Clinical and Operative Surgery, to take effect September 1, 1901.
- WILLIAM PAINE EVERTS**, Proctor, to take effect September 1, 1901.
- ALFRED LAWRENCE FISH**, Assistant in Political Economy. September 24, 1901.
- LANGDON FROTHINGHAM**, Instructor in Comparative Pathology and Bacteriology, to take effect September 1, 1901.
- APTHORP GOULD FULLER**, Assistant in Philosophy, to take effect February 11, 1901. January 28, 1901.
- EDWARD DWIGHT FULLERTON**, Assistant in Government, and Proctor, to take effect September 1, 1901.
- ALFRED COPE GARRETT**, Instructor in English. October 9, 1900.
- WILLIAM WATSON GOODWIN**, Eliot Professor of Greek Literature. April 8, 1901.
- JAMES BRADSTREET GREENOUGH**, Professor of Latin, to take effect at the end of the academic year. April 29, 1901.
- THOMAS HARVEY HAINES**, Proctor, to take effect September 1, 1901.
- ASAPH HALL**, Lecturer on Celestial Mechanics, to take effect September 1, 1901.
- ALBERT BUSHNELL HART**, Member of the Board of Examination Proctors. June 25, 1901.
- LAWRENCE JOSEPH HENDERSON**, Assistant in Chemistry. October 29, 1900.
- JOHN PERHAM HYLAN**, Proctor, to take effect September 1, 1901.
- RICHARD FAY JACKSON**, Assistant in Chemistry, to take effect September 1, 1901.
- HOMER HUNTINGTON KIDDER**, Instructor in English. September 24, 1901.
- WALDEMAR KOCH**, Assistant in Physiology. September 24, 1901.

- WALTER BRACKETT LANCASTER, Assistant in Ophthalmology, to take effect September 1, 1901.
- CHRISTOPHER COLUMBUS LANGDELL, Dane Professor of Law. October 9, 1900.
- GAILLARD THOMAS LAPSLEY, Instructor in History. January 28, 1901.
- SIDNEY ARCHER LORD, Assistant in Neurology, to take effect September 1, 1901.
- CHARLES PARKER LYMAN, Professor of Veterinary Medicine, to take effect September 1, 1901.
- ROBERT MACDOUGALL, Instructor in Philosophy, to take effect September 1, 1901.
- ALFRED BULL NICHOLS, Instructor in German, to take effect September 1, 1901.
- JAY BERGEN OGDEN, Instructor in Clinical Chemistry. September 24, 1901.
- FREDERICK HUNTINGTON OSGOOD, Professor of Veterinary Surgery, to take effect September 1, 1901.
- EDWIN WILLIAM PAHLOW, Assistant in History, to take effect September 1, 1901.
- WILLIAM HUNTINGTON PARKER, Assistant in Physiology, to take effect March 1, 1901. April 29, 1901.
- HIRAM STODDARD RALEY, Assistant in Chemistry, to take effect September 1, 1901.
- FREDERICK WILLIAM REYNOLDS, Austin Teaching Fellow in English, to take effect September 1, 1901.
- FRANK RUSSELL, Instructor in Anthropology. April 29, 1901.
- HENRY LATIMER SEAYER, Instructor in English. May 27, 1901.
- JOSEPH HENRY THAYER, Bussey Professor of New Testament Criticism and Interpretation, to take effect at the end of the academic year. January 28, 1901.
- JOSEPH TORREY, Jr., Instructor in Chemistry, to take effect September 1, 1901.
- CHARLES MARSHALL UNDERWOOD, Jr., Austin Teaching Fellow in Romance Languages and Literatures, to take effect September 1, 1901.
- JOSEPH PARKER WARREN, Assistant in Government, to take effect February 11, 1901. January 28, 1901.
- JOSEPH DEUTSCH WEIS, Assistant in Bacteriology, to take effect September 1, 1901.
- WILLIAM FRANKLIN WILLOUGHBY, Instructor in Economics, to take effect September 1, 1901.
- KENELM WINSLOW, Assistant Professor of Veterinary Therapeutics. September 24, 1901.

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## APPOINTMENTS.

### FACULTY OF ARTS AND SCIENCES.

[Without limit of time, or for more than one year.]

- COMFORT AVERY ADAMS, Jr., Assistant Professor of Electrical Engineering for five years from September 1, 1901. May 27, 1901.
- ABRAM PIATT ANDREW, Instructor in Economics. September 24, 1901.
- LEWIS EDWARDS GATES, Assistant Professor of Comparative Literature for five years from September 1, 1901. June 10, 1901.
- WILLIAM WATSON GOODWIN, Eliot Professor of Greek Literature, Emeritus. April 8, 1901.



- CHARLES GROSS, Professor of History. June 10, 1901.
- PAUL HENRY HANUS, Professor of the History and Art of Teaching. May 27, 1901.
- WILLIAM FENWICK HARRIS, Instructor in Greek from September 1, 1901. March 25, 1901.
- ALBERT ANDREW HOWARD, Professor of Latin. May 27, 1901.
- BYRON SATTERLEE HURLBUT, Assistant Professor of English for five years from September 1, 1901. June 25, 1901.
- LEWIS JEROME JOHNSON, Assistant Professor of Civil Engineering for five years from September 1, 1901. May 27, 1901.
- JAMES LEE LOVE, Assistant Professor of Mathematics for five years from September 1, 1901. May 13, 1901.
- EDWARD LAURENS MARK, Director of the Zoölogical Laboratory. November 19, 1900.
- HUGO RICHARD MEYER, Instructor in Economics. September 24, 1901.
- EDWARD KENNAED RAND, Instructor in Latin from September 1, 1901. February 25, 1901.
- ALBERT SAUVEUR, Assistant Professor of Metallurgy and Metallography for five years from September 1, 1901. May 13, 1901.
- CLEMENT LAWRENCE SMITH, Pope Professor of Latin. June 10, 1901.
- HERBERT WHIR SMYTH, Professor of Greek from September 1, 1901. February 25, 1901.
- OLIVER MITCHELL WENTWORTH SPRAGUE, Instructor in Economics. September 24, 1901.
- FRANK WILLIAM TAUSSIG, Henry Lee Professor of Economics. June 25, 1901.
- ROLAND THAXTER, Professor of Cryptogamic Botany. September 24, 1901.
- JOHN ALBRECHT WALZ, Instructor in German. June 3, 1901.
- HORATIO STEVENS WHITE, Professor of German, to serve from September 1, 1902. September 24, 1901.
- JAMES KELSEY WHITTEMORE, Instructor in Mathematics from September 1, 1901. April 29, 1901.
- LEO WIENER, Assistant Professor of Slavic Languages and Literatures for five years from September 1, 1901. May 13, 1901.
- JAY BACKUS WOODWORTH, Assistant Professor of Geology for five years from September 1, 1901. April 29, 1901.

## [For 1900-01.]

- EBENEZER HENRY ARCHIBALD, Assistant in Chemistry. November 5, 1900.
- NEWTON SAMUEL BACON, Assistant in Hygiene. October 9, 1900.
- CHARLES BEARDSLEY, Austin Teaching Fellow in Political Economy. November 5, 1900.
- DWIGHT ST. JOHN BOBB, Assistant in History. October 9, 1900.
- RAYNAL CAWTHORNE BOLLING, Assistant in English. October 9, 1900.
- HENRY COOK BOYNTON, Austin Teaching Fellow in Geology. November 5, 1900.
- HARRISON HITCHCOCK BROWN, Instructor in Mathematics. October 29, 1900.
- CHARLES THEODORE BURNETT, Assistant in Philosophy. November 12, 1900.
- HARRY LIONEL BURNHAM, Assistant in Government. October 9, 1900.
- ANTONIO ALFREDO CAPOTOSTO, Assistant in Italian. October 29, 1900.
- MARLBOROUGH CHURCHILL, Assistant in English. October 9, 1900.

- FLETCHER BARKER COFFIN, Assistant in Chemistry. October 9, 1900.  
 NELSON ROWBERRY DAVIS, Assistant in Chemistry. October 9, 1900.  
 LUDWIG JOSEPH DEMETER, Instructor in German. October 9, 1900.  
 ALFRED LEWIS PINNEO DENNIS, Assistant in History. October 9, 1900.  
 EDWARD ADDISON DUNLAP, Assistant in Chemistry. October 9, 1900.  
 MERRITT LYNDON FERNALD, Assistant in the Herbarium. October 29, 1900.  
 ALFRED LAWRENCE FISH, Assistant in Political Economy. October 9, 1900.  
 AUGUSTUS HENRY FISKE, Assistant in Chemistry. October 9, 1900.  
 BURTON PERCIVAL FLEMING, Instructor in Surveying (second half-year). February 11, 1901.  
 GEORGE SHANNON FORBES, Assistant in Chemistry. October 9, 1900.  
 ARTHORP GOULD FULLER, Assistant in Philosophy. October 9, 1900.  
 PHILIP JACOB GENTNER, Assistant in English. October 9, 1900.  
 RALPH WALDO GIFFORD, Assistant in French. October 9, 1900.  
 RICHARD HARWOOD HUSON HART, Assistant in English. October 9, 1900.  
 GEORGE WILLIAM HEIMROD, Austin Teaching Fellow in Chemistry. November 5, 1900.  
 ARTHUR STEDMAN HILLS, Assistant in Elocution. October 29, 1900.  
 HENRY BARRETT HUNTINGTON, Instructor in English for the second half-year. November 19, 1900.  
 JOHN PERHAM HYLAN, Assistant in Philosophy. October 9, 1900.  
 STEN KONOW, Assistant in Sanskrit from December 1 to the end of the academic year. November 12, 1900.  
 EDWIN CHESLEY ESTES LORD, Austin Teaching Fellow in Mineralogy and Petrography. November 5, 1900.  
 GEORGE RICHARD LYMAN, Austin Teaching Fellow in Botany. November 5, 1900.  
 DUNLAP JAMISON McADAM, Assistant in Chemistry. October 29, 1900.  
 MAURICE LAWRENCE McCARTHY, Assistant in Chemistry. October 9, 1900.  
 THOMAS CALVIN McKAY, Austin Teaching Fellow in Physics. November 5, 1900.  
 JOHN ALBERT MACY, Assistant in English. October 9, 1900.  
 ELWOOD MEAD, Lecturer on Irrigation. February 11, 1901.  
 JAMES FRANKLIN MESSENGER, Assistant in Philosophy. October 9, 1900.  
 LANDON CLARENCE MOORE, Assistant in Chemistry. November 5, 1900.  
 SYLVANUS GRISWOLD MORLEY, Instructor in French and Spanish. October 29, 1900. Austin Teaching Fellow in French and Spanish. November 5, 1900.  
 HORACE HENRY MORSE, Assistant in History. November 5, 1900.  
 JAMES AMBROSE MOYER, Austin Teaching Fellow in Mechanics. November 5, 1900.  
 DANIEL JAMES MURPHY, Assistant in History. October 9, 1900.  
 FREDERICK AMIL NELSON, Assistant in Mechanical Drawing. October 29, 1900.  
 GUY NEWHALL, Assistant in Government. October 9, 1900.  
 RAYMOND TASKER PARKE, Assistant in History. October 9, 1900.  
 JAMES HORACE PATTEN, Austin Teaching Fellow in Political Economy. November 5, 1900.  
 WILLIAM HOWELL REED, Instructor in German. October 9, 1900.  
 FREDERICK WILLIAM REYNOLDS, Assistant in English. October 29, 1900.  
 ALBIN LEAL RICHARDS, Assistant in Government. October 9, 1900.  
 CHARLES HENRY RIEBER, Assistant in Philosophy. October 9, 1900.  
 GUIDO CARL LEO RIEMER, Austin Teaching Fellow in German. November 5, 1900.

- JAY EMERY ROOT, Assistant in Chemistry. November 5, 1900.  
 HENRY LATIMER SEAVER, Assistant in English. October 9, 1900.  
 ARTHUR BLISS SEYMOUR, Assistant in the Cryptogamic Herbarium. October 9, 1900.  
 WILMON HENRY SHELDON, Austin Teaching Fellow in Philosophy. October 9, 1900.  
 MACY MILLMORE SKINNER, Austin Teaching Fellow in German. November 5, 1900.  
 CHARLES HENRY STEPHENS, Assistant in Government (second half-year). February 11, 1901.  
 EMIL HERMAN STONE, Assistant in Chemistry for remainder of the current year. January 7, 1901.  
 RALPH WALTER STONE, Assistant in Geology. November 19, 1900.  
 CHARLES MARSHALL UNDERWOOD, Jr., Austin Teaching Fellow in French and other Romance Languages. November 5, 1900.  
 JOSEPH PARKER WARREN, Assistant in Government. October 9, 1900.  
 FRANK DEWITT WASHBURN, Assistant in the Architectural Library for the remainder of the academic year. February 25, 1901.  
 FREDERICK MASON WILDER, Assistant in Meteorology (second half-year). February 11, 1901.  
 HENRY AARON YEOMANS, Austin Teaching Fellow in History and Government. November 5, 1900.  
 ROBERT MEARNS YERKES, Austin Teaching Fellow in Psychology. November 5, 1900.

[For 1901-02.]

- EDWARD LARRABEE ADAMS, Assistant in French and Spanish. April 29, 1901.  
 OAKES AMES, Instructor in Botany. June 25, 1901.  
 ABRAM PIATT ANDREW, Instructor in Political Economy. June 25, 1901.  
 EBENEZER HENRY ARCHIBALD, Assistant in Chemistry. September 24, 1901.  
 CHARLES HAMILTON ASHTON, Instructor in Mathematics. April 29, 1901.  
 CHARLES HAMILTON AYRES, Instructor in Physics. June 3, 1901.  
 WILLIAM WILSON BAKER, Instructor in Latin. June 10, 1901.  
 HIRAM BINGHAM, Jr., Austin Teaching Fellow in History. June 25, 1901.  
 HAROLD BISBEE, Assistant in Chemistry. September 24, 1901.  
 OTIS FISHER BLACK, Instructor in Chemistry. September 24, 1901.  
 ALBERT FRANCIS BLAKESLEE, Austin Teaching Fellow in Botany. June 10, 1901.  
 RAYNAL CAWTHORNE BOLLING, Instructor in English. April 29, 1901.  
 FREDERIC BONNET, Jr., Assistant in Chemistry. September 24, 1901.  
 ROBERT STANLEY BREED, Austin Teaching Fellow in Zoölogy. June 25, 1901.  
 HARRISON HITCHCOCK BROWN, Instructor in Mathematics. May 13, 1901.  
 WILLIAM GARROTT BROWN, Lecturer on American History since the Civil War. May 27, 1901.  
 ALPHONSE BRUN, Instructor in French. April 29, 1901.  
 CHARLES JESSE BULLOCK, Instructor in Economics. May 27, 1901.  
 HARRY LIONEL BURNHAM, Assistant in Government. June 25, 1901.  
 FREDERICK ALEXANDER BUSHÉE, Assistant in Economics. September 24, 1901.  
 DANIEL FRANCIS CALHANE, Assistant in Chemistry. September 24, 1901.  
 ANTONIO ALFREDO CAPOTOSTO, Assistant in Italian. April 29, 1901.  
 FREDERIC WALTON CARPENTER, Assistant in Zoölogy. April 29, 1901.  
 GEORGE HENRY CHASE, Instructor in Greek. March 25, 1901.

- THATCHER CLARK, Assistant in French. April 29, 1901.  
 JOHN FIRMAN COAR, Instructor in German. June 8, 1901.  
 JOHN FELT COLE, Instructor in Astronomy. June 3, 1901.  
 WILLIAM MORSE COLE, Instructor in the Principles of Accounting. June 25, 1901.  
 JULIAN LOWELL COOLIDGE, Instructor in Mathematics. April 29, 1901.  
 REGINALD ALDWORTH DALY, Instructor in Geology. April 29, 1901.  
 EUGENE ABRAHAM DARLING, Instructor in Hygiene. September 24, 1901.  
 LUDWIG JOSEPH DEMETER, Austin Teaching Fellow in German. June 3, 1901.  
 ROLAND BURRAGE DIXON, Instructor in Anthropology. March 25, 1901.  
 WILLIAM EDWIN DORMAN, Assistant in History. June 25, 1901.  
 ALDRICH DURANT, Assistant in Mechanical Drawing. June 25, 1901.  
 WILLIAM CURTIS FARABEE, Austin Teaching Fellow in Anthropology. June 25, 1901.  
 SIDNEY BRADSHAW FAY, Austin Teaching Fellow in History. June 8, 1901.  
 ALFRED LAWRENCE FISH, Assistant in Political Economy. June 25, 1901.  
 AUGUSTUS HENRY FISKE, Assistant in Chemistry. September 24, 1901.  
 ALFRED DOUGLASS FLINN, Instructor in Sanitary Engineering. September 24, 1901.  
 GEORGE SHANNON FORBES, Assistant in Chemistry. September 24, 1901.  
 ARTHUR BOWES FRIZELL, Instructor in Mathematics. May 13, 1901.  
 EDWARD DWIGHT FULLERTON, Assistant in Government. June 25, 1901.  
 ANDREW GARBUTT, Instructor in Modelling. June 25, 1901.  
 PHILIP JACOB GENTNER, Assistant in English. April 29, 1901.  
 ELLIOT HERSEY GOODWIN, Austin Teaching Fellow in Government. June 25, 1901.  
 CHESTER NOYES GREENOUGH, Instructor in English. April 29, 1901.  
 WILLIAM JAY HALE, Austin Teaching Fellow in Chemistry. June 25, 1901.  
 THOMAS HALL, Jr., Instructor in English. April 29, 1901.  
 JOHN GODDARD HART, Instructor in English. April 29, 1901.  
 HENRY HARRISON HAYNES, Instructor in Semitic Languages. March 25, 1901.  
 ARTHUR STEDMAN HILLS, Assistant in Elocution. June 25, 1901.  
 EDWIN BISSELL HOLT, Instructor in Psychology. June 25, 1901.  
 EDWARD VERMILYE HUNTINGTON, Instructor in Mathematics. September 24, 1901.  
 HENRY BARRETT HUNTINGTON, Instructor in English. April 29, 1901.  
 JOHN PERHAM HYLAN, Assistant in Philosophy. April 29, 1901.  
 RICHARD FAY JACKSON, Assistant in Chemistry. September 24, 1901.  
 KARL DETLEV JESSEN, Instructor in German. September 24, 1901.  
 MAXIMILIAN LINDSAY KELLNER, Lecturer on the History of Israel. March 25, 1901.  
 WALDO SHAW KENDALL, Instructor in German. June 3, 1901.  
 FRANK LOWELL KENNEDY, Instructor in Mechanical Drawing. May 13, 1901.  
 HOMER HUNTINGTON KIDDER, Instructor in English. April 29, 1901.  
 ALPHONSE MARIN LA MESLÉ, Instructor in French. April 29, 1901.  
 WILLIAM WITHERLE LAWRENCE, Instructor in German. June 3, 1901.  
 HOMER WILLIAMSON LE SOURD, Assistant in Physics. June 3, 1901.  
 GILBERT NEWTON LEWIS, Instructor in Chemistry. September 24, 1901.  
 MAURICE LAWRENCE MCCARTHY, Assistant in Chemistry. September 24, 1901.  
 WILLIAM EDWARD MCCLINTOCK, Instructor in Highway Engineering. May 13, 1901.  
 ROBERT MACDOUGALL, Instructor in Philosophy. March 25, 1901.

- WILLIAM EDWARD McELFRESH, Austin Teaching Fellow in Physics. June 8, 1901.
- THOMAS CALVIN MCKAY, Assistant in Physics. June 8, 1901.
- EDMUND ROBERT OTTO VON MACH, Instructor in Greek Art. April 29, 1901.
- KENNETH LAMARTINE MARK, Assistant in Chemistry. September 24, 1901.
- GUSTAVUS HOWARD MAYNADIER, Instructor in English. April 29, 1901.
- HUGO RICHARD MEYER, Instructor in Parliamentary Government in Australia. June 8, 1901.
- DICKINSON SERGEANT MILLER, Instructor in Philosophy. March 25, 1901.
- LONDON CLARENCE MOORE, Assistant in Chemistry. September 24, 1901.
- SYLVANUS GRISWOLD MORLEY, Austin Teaching Fellow in Romance Languages and Literatures. June 25, 1901.
- MARTIN MOWER, Instructor in Fine Arts. April 29, 1901.
- JAMES AMBROSE MOYER, Instructor in Descriptive Geometry. September 24, 1901. Assistant in Mechanics and Experimental Engineering. May 18, 1901.
- DANIEL JAMES MURPHY, Assistant in History. June 25, 1901.
- WILLIAM ALLAN NEILSON, Instructor in English. April 29, 1901.
- ARTHUR EDWIN NORTON, Instructor in Mechanical Drawing. June 10, 1901.
- ARTHUR ORLO NORTON, Instructor in the History and Art of Teaching. March 25, 1901.
- CARLETON ELDRIDGE NOYES, Instructor in English. April 29, 1901.
- EDGAR WILLIAM OLIVE, Instructor in Botany. June 10, 1901.
- EDWIN WILLIAM PAHLOW, Assistant in History. June 25, 1901.
- JAMES HORACE PATTEN, Austin Teaching Fellow in Economics. June 25, 1901.
- OGLESBY PAUL, Assistant in Landscape Architecture. June 10, 1901.
- AMOS WILLIAM PETERS, Assistant in Zoölogy. April 29, 1901.
- GEORGE WASHINGTON PIERCE, Assistant in Physics. June 8, 1901.
- ARTHUR POPE, Austin Teaching Fellow in Fine Arts. June 25, 1901.
- MURRAY ANTHONY POTTER, Instructor in Romance Languages. April 29, 1901.
- HENRY LEE PRESCOTT, Instructor in English. April 29, 1901.
- LOUIS MARCUS PRINDLE, Austin Teaching Fellow in Mineralogy and Petrography. June 25, 1901.
- HIRAM STODDARD RALEY, Assistant in Chemistry. September 24, 1901.
- BENJAMIN RAND, Instructor in Philosophy. April 29, 1901.
- HERBERT WILBUR RAND, Instructor in Zoölogy. April 29, 1901.
- GEORGE SHARPE RAYMER, Instructor in Mining. May 13, 1901.
- MOTTE ALLSTON READ, Instructor in Geology. September 24, 1901.
- WILLIAM HOWELL REED, Jr., Austin Teaching Fellow in German. June 8, 1901.
- FREDERICK WILLIAM REYNOLDS, Austin Teaching Fellow in English. June 25, 1901.
- HENRY MILNER RIDEOUT, Instructor in English. April 29, 1901.
- WILLIAM ZEBINA RIPLEY, Lecturer on Economics. September 24, 1901.
- EDWARD ROBINSON, Lecturer on Classical Archaeology. April 29, 1901.
- JAMES BIRCH RORER, Austin Teaching Fellow in Botany. June 10, 1901.
- PIERRE LA ROSE, Instructor in English. April 29, 1901.
- DENMAN WALDO ROSS, Lecturer on the Theory of Design. June 25, 1901.
- ARTHUR WILLIAM RYDER, Assistant in Indo-Iranian Languages. June 25, 1901.
- HENRY LATIMER SEAVER, Instructor in English. April 29, 1901.
- CHARLES STEPHEN SHAUGHNESSY, Austin Teaching Fellow in Engineering. June 25, 1901.

- ARTHUR ASAHEL SHURTLEFF, Instructor in Landscape Architecture. September 24, 1901.
- MACY MILLMORE SKINNER, Instructor in German. June 3, 1901.
- OLIVER MITCHELL WENTWORTH SPRAGUE, Instructor in Political Economy. June 25, 1901.
- CHARLES HENRY STEPHENS, Assistant in Government. June 25, 1901.
- WALTER DANA SWAN, Instructor in Architecture. June 25, 1901.
- CHARLES MARSHALL UNDERWOOD, Jr., Austin Teaching Fellow in Romance Languages and Literatures. June 25, 1901.
- JOSEPH PARKER WARREN, Assistant in Government. September 24, 1901.
- FRANK DEWITT WASHBURN, Assistant in the Architectural Library. April 29, 1901.
- EDGAR HUIDEKOPER WELLS, Assistant in English. June 3, 1901.
- ROGER CLARK WELLS, Austin Teaching Fellow in Chemistry. June 25, 1901.
- ROBERT MAXIMILIAN OTTOMAR WEERNAER, Instructor in German. June 3, 1901.
- CHARLES HENRY WHITE, Instructor in Mining and Metallurgy. May 13, 1901.
- STEPHEN EDGAR WHITING, Instructor in Electrical Engineering. May 13, 1901.
- FREDERICK MASON WILDER, Assistant in Meteorology. April 29, 1901.
- WILLIAM FRANKLIN WILLOUGHBY, Instructor in Economics. May 27, 1901.
- JOSEPH EDMUND WOODMAN, Assistant in Geology. April 29, 1901.
- JAMES HAUGHTON WOODS, Instructor in Anthropology and Instructor in Philosophy. March 25, 1901.
- ROBERT MEARNS YERKES, Austin Teaching Fellow in Psychology. March 25, 1901.

[*For the Calendar Year 1900.*]

- CYRUS GUERNSEY PRINGLE, Botanical Collector. October 29, 1900.

#### DIVINITY SCHOOL.

[*Without limit of time.*]

- WILLIAM WALLACE FENN, Bussey Professor of Theology. November 26, 1900.
- GEORGE FOOT MOORE, Professor of Theology from March 1, 1902. September 24, 1901.
- FRANCIS GREENWOOD PEABODY, Dean of the Faculty of Divinity. June 10, 1901.
- JOSEPH HENRY THAYER, Bussey Professor of New Testament Criticism and Interpretation, Emeritus. March 25, 1901.

[*For 1900-01.*]

- SAMUEL SILAS CURRY, Instructor in Elocution. October 9, 1900.

#### LAW SCHOOL.

[*Without limit of time.*]

- CHRISTOPHER COLUMBUS LANGDELL, Dane Professor of Law, Emeritus. October 9, 1900.

[*For 1901-02.*]

- WILLIAM RODMAN PEABODY, Instructor in Criminal Law. May 13, 1901.
- JOSEPH LEWIS STACKPOLE, Jr., Lecturer on Patent Law. July 12, 1901.
- EZRA RIPLEY THAYER, Lecturer on Massachusetts Practice. May 13, 1901.
- BRUCE WYMAN, Lecturer on Suretyship and Mortgage. May 13, 1901.

## MEDICAL SCHOOL.

[*Without limit of time, or for more than one year.*]

FRANK BURR MALLORY, Associate Professor of Pathology. June 25, 1901.  
 GEORGE GRAY SEARS, Assistant Professor of Clinical Medicine for five years  
 from September 1, 1901. February 11, 1901.

[*For 1900-01.*]

ROGER TROWBRIDGE ATKINSON, Austin Teaching Fellow in Histology and  
 Embryology. October 29, 1900.  
 DAVID NEWTON BLAKELEY, Assistant in Histology. October 9, 1900.  
 EUGENE ELLSWORTH EVERETT, Assistant in Bacteriology. October 29, 1900.  
 ALBERT CHAUNCEY EYCLESYMER, Austin Teaching Fellow in Histology and  
 Embryology. October 29, 1900.  
 HERBERT PARLIN JOHNSON, Austin Teaching Fellow in Comparative Pathology.  
 October 29, 1900.  
 FRED ROBERT JOUETT, Assistant in Chemistry (second half-year). January 14,  
 1901.  
 WALTER APPLETON LANE, Assistant in Chemistry (second half-year). January  
 14, 1901.  
 SIDNEY ARCHER LORD, Assistant in Neurology. October 9, 1900.  
 GEORGE BURGESS MAGRATH, Austin Teaching Fellow in Pathology. November  
 12, 1900.  
 HENRY ORLANDO MARCY, Jr., Assistant in Anatomy. October 9, 1900.  
 WILLIAM ROPES MAY, Assistant in Chemistry (second half-year). January 14,  
 1901.  
 WILLIAM HUNTINGTON PARKER, Assistant in Physiology. October 9, 1900.  
 ARTHUR KINGSBURY STONE, Assistant in the Theory and Practice of Physic  
 from December 1, for the remainder of the academic year. December 10,  
 1900.  
 FREDERICK HERMAN VERHOEFF, Assistant in Pathology. October 9, 1900.

[*For 1901-02.*]

SEABURY WELLS ALLEN, Assistant in Anatomy. June 3, 1901.  
 JOHN LINCOLN AMES, Assistant in Clinical Medicine. June 3, 1901.  
 ROGER TROWBRIDGE ATKINSON, Instructor in Histology and Embryology. June  
 3, 1901.  
 GEORGE SHERWIN CLARKE BADGER, Assistant in the Theory and Practice of  
 Physic. June 3, 1901.  
 FRANKLIN GREENE BALCH, Assistant in Clinical and Operative Surgery. June  
 3, 1901.  
 JOHN WASHBURN BARTOL, Assistant in Clinical Medicine. June 3, 1901.  
 HENRY HARRIS AUBREY BEACH, Lecturer on Surgery. June 3, 1901.  
 JOHN BAPT BLAKE, Assistant in Clinical and Operative Surgery. June 3, 1901.  
 JOHN TAYLOR BOTTOMLEY, Assistant in Clinical and Operative Surgery. June 3,  
 1901.  
 JOHN TEMPLETON BOWEN, Instructor in Dermatology. June 3, 1901.  
 CHARLES HERBERT BOXMEYER, Austin Teaching Fellow in Comparative Path-  
 ology. June 3, 1901.

- JOHN LEWIS BREMER, Assistant in Histology. June 3, 1901.
- GEORGE WASHINGTON WALES BREWSTER, Assistant in Clinical and Operative Surgery. June 3, 1901.
- EDWARD MARSHALL BUCKINGHAM, Clinical Instructor in Diseases of Children. June 3, 1901.
- CHARLES SHOREY BUTLER, Assistant in Anatomy. June 3, 1901.
- HUGH CABOT, Assistant in Operative Surgery. June 3, 1901.
- RICHARD CLARKE CABOT, Assistant in Clinical Medicine. June 3, 1901.
- WALTER BRADFORD CANNON, Instructor in Physiology. June 3, 1901.
- FREDERICK EDWARD CHENEY, Assistant in Ophthalmology. June 3, 1901.
- FARRAR COBB, Assistant in Clinical and Operative Surgery. June 3, 1901.
- ERNEST AMORY CODMAN, Assistant in Clinical and Operative Surgery. June 3, 1901.
- JOHN MATTHEW CONNOLLY, Assistant in Chemistry. June 3, 1901.
- ALGERNON COOLIDGE, Jr., Clinical Instructor in Laryngology. June 3, 1901.
- EDWARD COWLES, Clinical Instructor in Mental Diseases. June 3, 1901.
- GEORGE ARTHUR CRAIGIN, Assistant in Diseases of Children. June 3, 1901.
- EUGENE ANTHONY CROCKETT, Assistant in Otology. June 3, 1901.
- ELBRIDGE GERRY CUTLER, Instructor in the Theory and Practice of Physic. June 3, 1901.
- LINCOLN DAVIS, Assistant in Anatomy. June 3, 1901.
- THOMAS AMORY DEBLOIS, Clinical Instructor in Laryngology. June 3, 1901.
- FRANCIS PARKMAN DENNY, Assistant in Bacteriology. June 3, 1901.
- JAMES CROWLEY DONOGHUE, Assistant in Histology. June 3, 1901.
- SAMUEL HOLMES DURGIN, Lecturer on Hygiene. June 3, 1901.
- EDWIN WELLES DWIGHT, Instructor in Legal Medicine and Assistant in Clinical and Operative Surgery. June 3, 1901.
- JOHN WHEELOCK ELLIOT, Lecturer on Surgery. June 3, 1901.
- EUGENE ELLSWORTH EVERETT, Assistant in Bacteriology. June 3, 1901.
- JOHN WOODFORD FARLOW, Clinical Instructor in Laryngology. June 3, 1901.
- GEORGE WASHINGTON GAY, Lecturer on Surgery. June 3, 1901.
- CHARLES MONTRAVILLE GREEN, Secretary of the Faculty of Medicine. June 3, 1901.
- ROBERT BATTEY GREENOUGH, Assistant in Surgery. June 3, 1901.
- PHILIP HAMMOND, Assistant in Otology. June 3, 1901.
- GEORGE HAVEN, Instructor in Gynaecology. June 3, 1901.
- HENRY FOX HEWES, Instructor in Clinical Chemistry. June 3, 1901.
- FRANK ALBERT HIGGINS, Instructor in Obstetrics and Assistant in Gynaecology. June 3, 1901.
- JOHN HOMANS, Lecturer on Surgery. June 3, 1901.
- EDWIN EVERETT JACK, Assistant in Ophthalmology. June 3, 1901.
- HENRY JACKSON, Instructor in Clinical Medicine. June 3, 1901.
- JAMES MARSH JACKSON, Assistant in Clinical Medicine. June 3, 1901.
- JAMES OSCAR JORDAN, Assistant in Materia Medica. June 3, 1901.
- ELLIOT PROCTOR JOSLIN, Assistant in the Theory and Practice of Physic. June 3, 1901.
- PHILIP COOMBS KNAPP, Clinical Instructor in Diseases of the Nervous System. June 3, 1901.
- WALDEMAR KOCH, Assistant in Physiology. June 3, 1901.
- MAYNARD LADD, Assistant in Physiological Chemistry and in Diseases of Children. June 3, 1901.



- WALTER BRACKETT LANCASTER, Assistant in Ophthalmology. June 3, 1901.  
EDWARD BINNEY LANE, Clinical Instructor in Mental Diseases. June 3, 1901.  
RALPH CLINTON LARRABEE, Assistant in Histology. June 3, 1901.  
FREDERIC THOMAS LEWIS, Austin Teaching Fellow in Histology and Embryology. June 3, 1901.  
RALPH STAYNER LILLIE, Assistant in Physiology. June 3, 1901.  
SIDNEY ARCHER LORD, Assistant in Neurology. June 3, 1901.  
HOWARD AUGUSTUS LOTHROP, Assistant in Surgery. June 3, 1901.  
FRED BATES LUND, Assistant in Clinical and Operative Surgery. June 3, 1901.  
JOHN HILDRETH MCCOLLOM, Instructor in Contagious Diseases. June 3, 1901.  
GEORGE BURGESS MAGRATH, Assistant in Pathology. June 3, 1901.  
HENRY ORLANDO MARCY, Jr., Assistant in Anatomy. June 3, 1901.  
SAMUEL JASON MIXTER, Assistant in Operative Surgery. June 3, 1901.  
GEORGE HOWARD MONKS, Instructor in Clinical Surgery and Assistant in Operative Surgery. June 3, 1901.  
JOHN LOVETT MORSE, Instructor in Diseases of Children. June 3, 1901.  
HARRIS PEYTON MOSHER, Assistant in Anatomy. June 3, 1901.  
JAMES GREGORY MUMFORD, Assistant in Clinical and Operative Surgery. June 3, 1901.  
JOHN CUMMINGS MUNRO, Instructor in Surgery. June 3, 1901.  
PRECY MUSGRAVE, Assistant in Chemistry. June 3, 1901.  
FRANKLIN SPILMAN NEWELL, Assistant in Obstetrics and Gynaecology. June 3, 1901.  
EDWARD HALL NICHOLS, Instructor in Surgical Pathology. June 3, 1901.  
JAY BERGEN OGDEN, Instructor in Clinical Chemistry. June 3, 1901.  
CALVIN GATES PAGE, Assistant in Bacteriology. June 3, 1901.  
HENRY JOSEPH PERRY, Assistant in Bacteriology. June 3, 1901.  
CHARLES ALLEN PORTER, Instructor in Surgery. June 3, 1901.  
ABNER POST, Instructor in Syphilis. June 3, 1901.  
JOSEPH HERSEY PRATT, Instructor in Pathology. June 3, 1901.  
WILLIAM HERBERT PRESCOTT, Assistant in Clinical Medicine. June 3, 1901.  
ALEXANDER QUACKENBOSCH, Assistant in Ophthalmology. June 25, 1901.  
WILLIAM HENRY ROBEY, Jr., Assistant in Bacteriology. June 3, 1901.  
CHARLES LOCKE SCUDDER, Assistant in Clinical and Operative Surgery. June 3, 1901.  
WILLIAM HENRY SMITH, Assistant in Clinical Medicine. June 3, 1901.  
MYLES STANDISH, Instructor in Ophthalmology. June 3, 1901.  
FREDERICK WINSLOW STETSON, Assistant in Anatomy. June 3, 1901.  
ARTHUR KINGSBURY STONE, Assistant in the Theory and Practice of Physic. June 3, 1901.  
MALCOLM STORER, Assistant in Gynaecology. June 3, 1901.  
LAWRENCE WATSON STRONG, Assistant in Hygiene. June 3, 1901.  
HOWARD TOWNSEND SWAIN, Assistant in Obstetrics. June 3, 1901.  
EDWARD WILLYS TAYLOR, Instructor in Neuropathology. June 3, 1901.  
PAUL THORNDIKE, Instructor in Genito-Urinary Surgery. June 3, 1901.  
MAURICE PAUL OCTAVE VEJUX-TYRODE, Assistant in Pharmacology. June 3, 1901.  
FREDERICK HERMAN VERHOEFF, Assistant in Pathology. June 3, 1901.  
HERMAN FRANK VICKEY, Instructor in Clinical Medicine. June 3, 1901.  
GEORGE LINCOLN WALTON, Clinical Instructor in Diseases of the Nervous System. June 3, 1901.

- JOHN WARREN, Demonstrator of Anatomy. June 3, 1901.  
 FRANCIS SEDGWICK WATSON, Lecturer on Genito-Urinary Surgery. June 3, 1901.  
 JOSEPH DEUTSCH WEIS, Assistant in Bacteriology. June 3, 1901.  
 CHARLES JAMES WHITE, Assistant in Dermatology. June 3, 1901.  
 FRANKLIN WARREN WHITE, Assistant in the Theory and Practice of Physic. June 3, 1901.  
 GEORGE SHATTUCK WHITESIDE, Assistant in Anatomy. June 3, 1901.  
 WILLIAM WHITTRIDGE WILLIAMS, Assistant in Pathology. July 12, 1901.  
 CHARLES FRANCIS WITHINGTON, Instructor in Clinical Medicine. June 3, 1901.  
 FREDERICK ADAMS WOODS, Instructor in Histology and Embryology. June 3, 1901.  
 JAMES HOMER WRIGHT, Instructor in Pathology. June 3, 1901.  
 ERNEST BOTEN YOUNG, Assistant in Anatomy. June 3, 1901.

## DENTAL SCHOOL.

[For 1900-01.]

- GEORGE CHANDLER BALDWIN, Assistant in Oral Surgery. October 29, 1900.  
 CHARLES WILLIAM ROGERS, Assistant in Dental Materia Medica. October 29, 1900.

[For 1901-02.]

- LAWRENCE WILLS BAKER, Assistant in Orthodontia. June 3, 1901.  
 GEORGE CHANDLER BALDWIN, Assistant in Oral Surgery. June 3, 1901.  
 EDWIN CARTER BLAISDELL, Instructor in Operative Dentistry. June 3, 1901.  
 FREDERICK BRADLEY, Instructor in Operative Dentistry. June 3, 1901.  
 BURT MYRON BRISTOL, Instructor in Operative Dentistry. June 3, 1901.  
 ALLEN STANLEY BURNHAM, Instructor in Mechanical Dentistry. June 3, 1901.  
 ASHER HARRIMAN ST. CLAIR CHASE, Assistant Demonstrator of Mechanical Dentistry. June 3, 1901.  
 ERNEST HOWARD CHUTE, Instructor in Mechanical Dentistry. June 3, 1901.  
 DWIGHT MOSES CLAPP, Clinical Lecturer on Operative Dentistry. June 3, 1901.  
 HAROLD DEWITT CROSS, Demonstrator of Mechanical Dentistry. June 3, 1901.  
 DWIGHT WARD DICKINSON, Assistant Demonstrator of Operative Dentistry. June 3, 1901.  
 JOHN DANA DICKINSON, Clinical Instructor in Mechanical Dentistry. June 3, 1901.  
 FORREST GREENWOOD EDDY, Instructor in Operative Dentistry. June 3, 1901.  
 ARTHUR WARREN ELDRÉD, Instructor in Mechanical Dentistry. June 3, 1901.  
 EDWIN LINWOOD FARRINGTON, Instructor in Operative Dentistry. June 3, 1901.  
 GEORGE LINCOLN FORREST, Instructor in Operative Dentistry. June 3, 1901.  
 HARRY LINWOOD GRANT, Instructor in Mechanical Dentistry. June 3, 1901.  
 GEORGE RUFUS GRAY, Instructor in Operative Dentistry. June 3, 1901.  
 FRANCIS HERBERT HARDING, Instructor in Operative Dentistry. June 3, 1901.  
 ERNEST JEWETT HART, Instructor in Extracting and Anaesthesia. June 3, 1901.  
 THOMAS BERNARD HAYDEN, Instructor in Mechanical Dentistry. June 3, 1901.  
 ELLIS PROCTOR HOLMES, Instructor in Operative Dentistry. June 3, 1901.  
 ROBERT JOHN McMEKIN, Demonstrator of Operative Dentistry. June 3, 1901.

- GEORGE HOWARD MONKS**, Instructor in Surgical Pathology. June 3, 1901.  
**LESLIE HERBERT NAYLOR**, Instructor in Operative Dentistry. June 3, 1901.  
**JOSEPH TOTTEN PAUL**, Instructor in Operative Dentistry. June 3, 1901.  
**CHARLES ERNEST PERKINS**, Instructor in Operative Dentistry. June 3, 1901.  
**CHARLES WILLIAM RODGERS**, Assistant in Dental Materia Medica. June 3, 1901.  
**HENRY CARLTON SMITH**, Assistant in Chemistry. June 3, 1901.  
**WILLIAM DANIEL SQUAREBRIGS**, Instructor in Extracting and Anaesthesia.  
 June 3, 1901.  
**WILFRED HARLOW STARRATT**, Instructor in Operative Dentistry. June 3, 1901.  
**ARTHUR HENRY STODDARD**, Clinical Lecturer on Mechanical Dentistry. June  
 3, 1901.  
**EZRA FLETCHER TAFT**, Instructor in Operative Dentistry. June 3, 1901.  
**EDWARD WYLLYS TAYLOR**, Instructor in Neurology. June 3, 1901.  
**HENRY LAURISTON UPHAM**, Instructor in Operative Dentistry. June 3, 1901.  
**EVAN PARKER WENTWORTH**, Instructor in Operative Dentistry. June 3, 1901.  
**JULIUS GEORGE WILLIAM WERNER**, Clinical Instructor in Operative Dentistry.  
 June 3, 1901.

#### VETERINARY SCHOOL.

[For 1900-01.]

- ALBERT JAMES SHIELDON**, Assistant Surgeon at the Veterinary Hospital. Novem-  
 ber 12, 1900.

#### BUSSEY INSTITUTION.

[For 1901-02.]

- FRANK THOMPSON DILLINGHAM**, Assistant in Chemistry. June 25, 1901.  
**HENRY HEYWOOD FOX**, Instructor in Mathematics and Surveying. September  
 24, 1901.

#### OTHER APPOINTMENTS.

- HENRY PICKERING WALCOTT**, Chairman of the Corporation during the absence  
 of the President; a member of all the Faculties of the University, with  
 the powers and duties of the President therein during the absence of the  
 President; to act as the ordinary medium of communication between the  
 Corporation and the Board of Overseers during the absence of the Presi-  
 dent. November 26, 1900.  
**GEORGE T. PURVES**, Lecturer on the William Belden Noble Foundation for the  
 year 1901-02. February 25, 1901.  
**JOHN GEORGE JACK**, Lecturer at the Arnold Arboretum for the calendar years  
 1900 and 1901.  
**WALTER BRADFORD CANNON**, Auditor of the Randall Hall Association for one  
 year from September 1, 1900. October 9, 1900.  
**JEROME DAVIS GREENE**, Secretary to the President, from August 1, 1901.  
 September 24, 1901.

MEMBERS OF THE ADMINISTRATIVE BOARD OF HARVARD COLLEGE.

[For 1901-02.]

SEPTEMBER 24, 1901.

LEBARON RUSSELL BRIGGS, <i>Dean</i> .	GEORGE WASHINGTON CRAM.
ROBERT WHEELER WILLSON.	ROBERT DECOURCY WARD.
CHARLES POMEROY PARKER.	CHARLES BURTON GULICK.
CHARLES GROSS.	FRED NORRIS ROBINSON.
CHARLES HALL GRANDGENT.	JAY BACKUS WOODWORTH.
JOHN HAYS GARDINER.	CHARLES HENRY CONRAD WRIGHT.
ARCHIBALD CARY COOLIDGE.	RICHARD COBB.
LEWIS JEROME JOHNSON.	CHARLES PALACHE.
JAMES KELSEY WHITTEMORE.	

MEMBERS OF THE ADMINISTRATIVE BOARD OF THE LAWRENCE SCIENTIFIC SCHOOL.

[For 1901-02.]

NATHANIEL SOUTHGATE SHALER, <i>Dean</i> .	HEINRICH CONRAD BIERWIRTH.
IRA NELSON HOLLIS.	ROBERT TRACY JACKSON.
HERBERT LANGFORD WARREN.	JAMES LEE LOVE.
CHARLES ROBERT SANGER.	GEORGE HOWARD PARKER.
HENRY LLOYD SMITH.	COMFORT AVERY ADAMS, Jr.

MEMBERS OF THE ADMINISTRATIVE BOARD OF THE GRADUATE SCHOOL.

[For 1901-02.]

SEPTEMBER 24, 1901.

JOHN HENRY WRIGHT, <i>Dean</i> .	HANS CARL GÜNTHER VON JAGEMANN.
CRAWFORD HOWELL TOY.	EDWARD HENRY STROBEL.
CHARLES LORING JACKSON.	ALBERT BUSHNELL HART.
WILLIAM MORRIS DAVIS.	GEORGE LYMAN KITTREDGE.
MINTON WARREN.	HUGO MÜNSTERBERG.
MAXIME BÔCHER.	

PROCTORS.

[For 1900-01.]

DWIGHT ST. JOHN BOBB, for the remainder of the academic year. February 11, 1901.

HENRY COOK BOYNTON. October 9, 1900.

SIDNEY BRADSHAW FAT. October 9, 1900.

EDWARD DWIGHT FULLEERTON. October 9, 1900.

ARTHUR STEDMAN HILLS. October 29, 1900.

KENNETH GRANT TREMATYNE WEBSTER. November 19, 1900.

ARTHUR BRYANT WHITNEY, from May 4, 1901, for the remainder of the academic year. March 25, 1901.

[For 1901-02.]

APPOINTED JUNE 10, 1901, UNLESS OTHERWISE STATED.

CHARLES HAMILTON AYRES.	WILLIAM JAY HALE.
HOWARD CLARK BARBER.	ARTHUR STEDMAN HILLS.
WILLIAM LESTER BARNES, September 24, 1901.	JOHN PERHAM HYLAN.
LYNN STALEY BEALS.	WILLIAM EDWARD McELFRESH.
CHARLES BEARDSLEY.	LEON CARROLL MARSHALL.
CHARLES FRANCIS DORR BELDEN.	JAMES AMBROSE MOYER.
DWIGHT ST. JOHN BOBB.	JAMES HORACE PATTEN.
HENRY COOK BOYNTON.	WILLIAM THOMAS REID, Jr., Septem- ber 24, 1901.
JAMES FREEMAN CURTIS.	FREDERICK WILLIAM REYNOLDS.
MALCOLM DONALD.	GEORGE RUSSELL STOBBS.
WILLIAM PAINE EVERTS.	HENRY SMITH THOMPSON, September 24, 1901.
SIDNEY BRADSHAW FAY.	KENNETH GRANT TREMAYNE WEBSTER.
MERRITT LYNDON FERNALD.	ARTHUR BRYANT WHITNEY, March 25, 1901.
EDWARD DWIGHT FULLERTON.	LOUIS ELIOT WYMAN.
PHILIP JACOB GENTNER.	
THOMAS HARVEY HAINES.	

ROBERT MEARNS YERKES.

MEMBERS OF THE BOARD OF EXAMINATION PROCTORS.

[For 1900-01.]

APPOINTED OCTOBER 29, 1900, UNLESS OTHERWISE STATED.

LEROY ALLSTON AMES.	WALDEMAR KOCH.
WILLIAM WILSON BAKER.	GEORGE RICHARD LYMAN.
LYNN STALEY BEALS.	WILLIAM EDWARD McELFRESH.
GEORGE HUBBARD BLAKESLEE.	THOMAS CALVIN MCKAY.
HENRY COOK BOYNTON.	GEORGE FREDERICK WOODWARD MARK.
HARRISON HITCHCOCK BROWN.	KENNETH LAMARTINE MARK.
DANIEL FRANCIS CALHANE.	RAYMOND TASKER PARKE.
WALLACE PATTEN COHOE.	JAMES HORACE PATTEN.
HOWARD CRAWLEY.	WILLIAM HENRY POWERS.
WALLACE BRETT DONHAM.	CHARLES WILLIAM PRENTISS.
WILLIAM EDWIN DORMAN.	HERBERT WILBUR RAND.
RICHARD BLAIR EARLE.	FREDERICK WILLIAM REYNOLDS.
WILLIAM CURTIS FARABEE.	WILLIAM DANIEL SHUE, November 12, 1900.
SIDNEY BRADSHAW FAY.	GEORGE RUSSELL STOBBS.
EDWARD DWIGHT FULLERTON.	JONAS VILES.
THOMAS HARVEY HAINES.	WILLIAM ABBOTT WILLARD.
CHARLES THOMSON HASKELL.	ALFRED WILLIAM GUNNING WILSON.
GEORGE WILLIAM HEIMROD.	JOSEPH EDMUND WOODMAN.
LAWRENCE JOSEPH HENDERSON.	HENRY AARON YEOMANS.
HAROLD LINCOLN HUGHES.	ROBERT MEARNS YERKES.
JULIUS MUNROE JOHNSON.	

## PREACHERS TO THE UNIVERSITY.

[For 1901-02.]

JUNE 25, 1901.

LYMAN ABBOTT.  
FRANCIS BROWN.

PAUL REVERE FROTHINGHAM.  
GEORGE FOOT MOORE.  
ENDICOTT PEABODY.

## COMMITTEE ON THE REGULATION OF ATHLETIC SPORTS.

[For 1901-02.]

JUNE 25, 1901.

*Faculty Members :*

IRA NELSON HOLLIS.  
ARCHIBALD CARY COOLIDGE.  
THOMAS NIXON CARVER.

*Graduate Members :*

JAMES JACKSON STORROW.  
ROLAND WILLIAM BOYDEN.  
BERTRAM GORDON WATERS.

## TRUSTEES OF THE HARVARD UNION.

MAY 13, 1901.

IRA NELSON HOLLIS.  
ROBERT BACON.  
WILLIAM ROSCOE THAYER.

JAMES JACKSON STORROW.  
WILLIAM COWPER BOYDEN.  
CHARLES FRANCIS ADAMS, 2d.  
MALCOLM DONALD.

## TRUSTEES OF THE MUSEUM OF FINE ARTS.

[For one year from January 1, 1901.]

NOVEMBER 19, 1900.

WILLIAM STURGIS BIGELOW.      ARTHUR ASTOR CAREY.  
ARTHUR TRACY CABOT.

ORDINARY DEGREES CONFERRED IN 1899, 1900,  
AND 1901.

	1899.	1900.	1901.
Bachelors of Arts . . . . .	443	404	457
Bachelors of Arts out of course . . . . .	25	15	26
Bachelors of Science . . . . .	46	59	75
Bachelors of Science out of course . . . . .	11	6	4
Bachelors of Divinity . . . . .	2	5	2
Bachelors of Laws . . . . .	109	126	186
Bachelors of Laws out of course . . . . .	8	8	9
Bachelors of Agricultural Science . . . . .	0	0	2
Doctors of Medicine . . . . .	108	180	116
Doctors of Medicine out of course . . . . .	1	0	4
Doctors of Dental Medicine . . . . .	36	33	29
Doctors of Dental Medicine out of course . . . . .	1	0	0
Doctors of Veterinary Medicine . . . . .	8	7	6
Doctors of Veterinary Medicine out of course . . . . .	1	0	1
Masters of Arts . . . . .	118	125	119
Masters of Arts out of course . . . . .	6	9	6
Masters of Science . . . . .	6	1	7
Masters of Science out of course . . . . .	0	0	3
Doctors of Philosophy . . . . .	23	35	29
Doctors of Science . . . . .	1	1	0
Totals . . . . .	<u>953</u>	<u>964</u>	<u>1081</u>

PUBLICATIONS OF THE MUSEUM OF COMPARATIVE  
ZOOLOGY FOR THE ACADEMIC YEAR 1900-01.

Bulletin : —

Vol. XXXVI.

No. 5. Contributions from the Zoölogical Laboratory. No. 114. The Development of the Mouth-parts of *Anurida maritima* Guér. By Justus Watson Folsom. 73 pp. 8 Plates. October, 1900.

No. 6. Reports on the Dredging Operations off the West Coast of Central America to the Galapagos, to the West Coast of Mexico, and in the Gulf of California, in Charge of Alexander Agassiz, carried on by the U. S. Fish Commission Steamer "Albatross," during 1891, Lieut. Commander Z. L. Tanner, U. S. N., commanding. XXVIII. Description of two new Lizards of the Genus *Anolis* from Cocos and Malpelo Islands. By Leonhard Stejneger. 6 pp. 1 Plate. November, 1900.

No. 7. Contributions from the Zoölogical Laboratory. No. 123. The Oocyst of Decapod Crustacea: its Structure, Development, and Functions. By C. W. Prentiss. 87 pp. 10 Plates. July, 1901.

No. 8. On a Collection of Birds from Liu Kiu Islands. By Outram Bangs. 17 pp. July, 1901.

Vol. XXXVIII. Geological Series, Vol. V.

No. 1. Notes on the Limestones and General Geology of the Fiji Islands, with special reference to the Lau Group. Based upon Surveys made for Alexander Agassiz. By E. C. Andrews. With a Preface by T. W. Edgeworth David. 50 pp. 40 Plates. November, 1900.

No. 2. The Structural Relations of the amygdaloidal Melaphyr in Brookline, Newton, and Brighton, Mass. By Henry T. Burr. 19 pp. 2 Plates. March, 1901.

No. 3. The Physiography of Acadia. By Reginald A. Daly. 34 pp. 11 Plates. March, 1901.

No. 4. An Excursion to the Grand Cañon of the Colorado. By W. M. Davis. 97 pp. 2 Plates. May, 1901.

Report : —

1899-1900. 41 pp. January, 1901.



TABLE I.

ILLNESS REPORT, 1900-01.

Diseases.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Appendicitis . . . . .	..	4	4	5	1	4	3	5	6	1	83
Chicken-pox . . . . .	..	..	..	..	4	1	..	..	1	..	6
"Colds" . . . . .	1	136	190	165	277	168	248	115	91	5	1896
Constipation . . . . .	..	4	8	..	..	..	..	1	1	..	14
Diarrhoea . . . . .	..	47	39	26	20	7	18	18	9	..	184
Diphtheria . . . . .	..	..	..	1	..	2	6	1	1	1	12
Ears . . . . .	..	4	5	5	5	4	7	11	2	..	43
Eyes . . . . .	..	29	42	32	29	38	28	23	25	13	259
General Debility . . . . .	3	10	13	11	10	8	19	6	10	5	95
Headache . . . . .	..	14	23	28	19	14	21	12	15	1	147
Indigestion . . . . .	..	63	70	90	42	36	46	29	27	8	411
Jaundice . . . . .	..	4	1	1	3	6	2	..	..	..	17
La Grippe . . . . .	1	3	10	9	129	41	50	20	13	..	276
Malaria . . . . .	..	12	2	4	1	1	..	3	9	..	32
Measles . . . . .	..	..	..	..	..	..	1	..	..	..	1
Miscellaneous . . . . .	5	90	122	92	125	53	85	62	71	14	719
Mumps . . . . .	..	4	6	22	8	4	13	9	..	..	66
Neuralgia . . . . .	..	5	9	12	5	11	11	10	5	..	68
Overwork . . . . .	..	6	13	11	12	10	6	9	6	7	80
Pneumonia . . . . .	..	..	2	..	1	1	1	..	1	..	6
Rheumatism . . . . .	1	10	4	7	3	2	8	10	6	2	58
Scarlet Fever . . . . .	..	..	1	1	1	..	1	..	..	..	4
Skin Diseases . . . . .	..	11	12	5	5	6	4	9	17	10	79
Surgical . . . . .	2	85	80	54	44	31	40	40	43	10	439
Tonsillitis . . . . .	..	8	27	12	17	19	32	21	22	15	158
Typhoid . . . . .	..	4	4	3	2	1	..	..	1	..	15
<b>Totals . . . . .</b>	<b>13</b>	<b>553</b>	<b>687</b>	<b>596</b>	<b>763</b>	<b>463</b>	<b>650</b>	<b>414</b>	<b>382</b>	<b>77</b>	<b>4603</b>
Visits . . . . .	..	..	..	..	..	..	..	..	..	..	1326
Office consultations . . . . .	..	..	..	..	..	..	..	..	..	..	2279
<b>Total number of consultations . . . . .</b>	..	..	..	..	..	..	..	..	..	..	<b>3605</b>
Calls on students not found in (not included in above) . . . . .	..	..	..	..	..	..	..	..	..	..	424
Cases not seen by the Medical Visitor . . . . .	..	..	..	..	..	..	..	..	..	..	2186

TABLE II. — ILLNESS REPORT AS RELATED TO THE DIFFERENT SCHOOLS.

	College.					Scientific.					Law. Grad.	Div.	Medical, Bussey, etc.	Totals.	
	1	2	3	4	SP.	1	2	3	4	SP.					
															1
Appendicitis	10	8	5	5	1	..	1	..	..	..	2	1	..	..	83
Chicken-pox	1	1	2	1	..	..	1	..	..	..	..	..	..	..	6
"Colds"	282	372	245	183	54	75	47	13	16	15	44	26	4	20	1396
Constipation	4	5	2	2	..	..	..	..	..	..	3	..	..	..	14
Diarrhoea	30	53	36	20	11	16	7	5	..	2	1	3	..	..	184
Diphtheria	2	3	3	..	..	..	2	..	..	..	..	..	..	..	12
Ears	11	10	6	4	4	1	1	..	1	..	..	..	..	1	43
Eyes	48	63	44	27	8	21	7	1	6	5	4	4	..	1	269
General Debility	13	19	15	13	7	6	4	1	2	2	3	9	1	14	95
Headache	36	51	14	16	1	16	3	2	..	2	2	2	..	..	147
Indigestion	85	108	61	65	18	25	20	6	..	6	6	10	..	1	411
Jaundice	5	2	5	3	..	..	1	..	..	..	..	1	..	..	17
La Grippe	63	57	47	34	13	14	9	4	4	5	9	13	1	3	276
Malaria	5	8	2	4	2	2	3	..	..	3	1	2	..	..	32
Measles	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1
Miscellaneous	180	156	112	86	50	25	9	5	7	8	33	34	2	12	719
Mumps	8	12	6	6	2	5	1	..	..	..	19	4	..	3	66
Neuralgia	10	17	13	11	5	5	3	1	1	..	..	2	..	..	68
Overwork	8	15	10	11	6	1	3	..	1	..	11	9	8	2	80
Pneumonia	1	2	..	1	..	2	..	..	..	..	..	..	..	..	6
Rheumatism	10	13	7	8	1	3	1	..	2	2	1	4	1	..	53
Scarlet Fever	1	2	..	..	..	..	..	..	..	1	..	..	..	..	4
Skin Diseases	12	22	7	14	3	3	2	1	..	2	7	4	..	2	79
Surgical	80	91	74	60	7	30	16	6	7	7	15	15	1	20	429
Tonsillitis	37	34	30	14	7	14	4	2	1	1	8	1	1	4	158
Typhoid	1	2	4	1	..	3	..	1	..	..	3	..	..	..	16
Totals	942	1126	751	587	201	267	145	49	48	61	175	153	14	84	4603
Percentage	175	210	197	150	133	172	106	75	69	74	27	46	50	..	..

STATISTICS RELATING TO GRADUATION FROM  
HARVARD COLLEGE IN LESS THAN  
FOUR YEARS.

(See pp. 83-89.)

AVERAGE AGE

OF COLLEGE STUDENTS AT THE TIME OF THEIR ENTRANCE ON THE  
FRESHMAN YEAR.

Classes entering 1856-1860	17 yrs., 10.86 mos.
1861-1865	18 " 4.81 "
1866-1870	18 " 4.67 "
1871-1875	18 " 6.71 "
1876-1880	18 " 10.10 "
1881-1885	18 " 11.52 "
1886-1890	19 " 3.63 "
1891-1895	19 " 1.43 "
1896-1900	19 " 0.48 "

These averages are made up from the tables in the President's Reports, which are "computed on the assumption that all who ever joined each class were admitted as Freshmen."

THE FOUR YEARS COLLEGE COURSE.

TOTAL AMOUNT OF WORK REQUIRED SINCE 1884, WHEN THE  
FRESHMAN YEAR CEASED TO BE WHOLLY PRESCRIBED.

1884-1890	18.4 courses.
1890-1894	18.2 "
1894-1899	18 "
1899-	17* "

DEFICIENCIES

OF STUDENTS ENTERING THE FRESHMAN CLASS BY EXAMINATION  
IN 1900.

Number admitted with no deficiency . . . . .	241
" " deficient in such admission studies only as are not taught in College . . . . .	42
" " deficient in admission studies taught in College, amounting to: $\frac{1}{2}$ course . . . . .	91
1 " . . . . .	65
$1\frac{1}{2}$ courses . . . . .	29
2 " . . . . .	16
$2\frac{1}{2}$ " . . . . .	7
3 " . . . . .	6
$3\frac{1}{2}$ " . . . . .	4
Total number with deficiencies which may be made up by additional College work . . . . .	<u>218</u>
Total number admitted by examination . . . . .	501

\* For students who fail to attain Grade C in English A, the total is 17.5 courses.

## ANTICIPATION OF COLLEGE STUDIES.

The following table shows the number of students who have anticipated college work in various amounts, on their admission to the Freshman class, in the last four years:—

Amount anticipated	Number of Students			
	1897	1898	1899	1900
$\frac{1}{2}$ course . . . . .	28	42	47	41
1 " . . . . .	81	62	81	77
$1\frac{1}{2}$ courses . . . . .	9	16	17	20
2 " . . . . .	20	18	15	32
$2\frac{1}{2}$ " . . . . .	1	6	4	2
3 " . . . . .	3	4	5	6
$3\frac{1}{2}$ " . . . . .	..	..	1	2
4 " . . . . .	..	..	1	2
2 courses or more . . . . .	24	28	26	44
1 course " " . . . . .	114	106	124	141
Total number of students anticipating . . . . .	142	148	171	188
Total number of courses anticipated . . . . .	160	170	192 $\frac{1}{2}$	230
Total number of students entering by examination . . . . .	490	428	457	501

## ADDITIONAL STUDIES.

(CLASS OF 1900.)

The following figures are based on the records of 395 students who received the degree of Bachelor of Arts in 1900, including 70 who had had leave of absence during their Senior year. Of these seventy, 11 completed more than the total number of courses (18) required for the degree.

The first table shows the extent to which additional studies were taken and completed by students of the Class of 1900.

Amount in excess of total requirement.	Number of Students.
$\frac{1}{2}$ course	59
1 "	58
$1\frac{1}{2}$ courses	31
2 "	17
$2\frac{1}{2}$ "	13
3 "	10
$3\frac{1}{2}$ "	4
4 "	12
$4\frac{1}{2}$ "	1
5 "	3
6 "	1
Total . . . . .	204

The second table shows the work done in their Senior year, in excess of the amount needed to complete the total of 18 courses, by 182 of these students who had reached the beginning of that year with "additional" studies to their credit. Two of the 182 were on leave of absence.

Amount completed beyond what was required to make up the total of 18 courses.	Number of Students.
$\frac{1}{2}$ course	52
1 "	47
$1\frac{1}{2}$ courses	21
2 "	17
$2\frac{1}{2}$ "	10
3 "	10
$3\frac{1}{2}$ "	3
4 "	12
$4\frac{1}{2}$ "	4
5 "	4
$5\frac{1}{2}$ "	1
6 "	1
Total . . . . .	182

Of these 182, 22 expected a part of the work of their Senior year to be counted for the degree of Master of Arts.

The students represented in the next table might have applied for leave to reduce their college work on the ground of having anticipated college studies at admission (see page 310), but refrained from doing so. The work anticipated constitutes therefore, in their case, a clear addition to the total requirement.

Amount anticipated.	Number of Students.
$\frac{1}{2}$ course	16
1 “	19
$1\frac{1}{2}$ courses	5
2 “	11
$2\frac{1}{2}$ “	1
Whole number of students . . . . .	52
Total number of courses anticipated . . .	59

## GRADUATION IN THREE YEARS.

The following table shows the number of students who received the degree of Bachelor of Arts in each of the last five years after completing the work of the course in three years, and shows what became of them, so far as their destination is known.

Destination.	1896	1897	1898	1899	1900	Total in 5 years.
Harvard Law School . . . . .	18	20	13	33	31	115
“ Medical School . . . . .	3	5	12	7	5	32
“ Graduate School . . . . .	2	1	3	8	8	22
“ Divinity School . . . . .	1	..	..	..	1	2
Lawrence Scientific School . . . . .	..	..	..	1	1	2
Other institutions . . . . .	..	1	1	2	1	5
Teaching . . . . .	2	6	1	1	3	13
Writing . . . . .	..	..	..	..	1	1
The Ministry . . . . .	..	..	..	..	1	1
Business . . . . .	..	3	..	3	15	21
Unknown . . . . .	11	4	13	9	5	42
Whole number* completing course in 3 years . . . . .	37	40	43	64	72	256
Number* completing course regularly in 4 years . . . . .	275	258	262	293	236	1324
Whole number† graduated A.B.	392	381	391	443	404	2011

\* Not including students who were admitted to advanced standing or entered otherwise than by the regular admission examinations.

† Not including degrees granted out of course.

TEACHERS IN THE SUMMER SCHOOL FOR CUBAN  
TEACHERS, 1901.

CHARLES CURTIS EATON,  
ARTHUR FISHER WHITTEM,  
NORMAN FISHER HALL,

LILLIAN ESTELLE CLARK,  
HARRIET M. CUTLER,  
ELIZABETH FORBES.





# INDEX.

---

	PAGE
Abbot, Ezra, library devices invented by . . . . .	82
Academic Distinctions, publication of . . . . .	100
Administrative department of University . . . . .	46
Admission examinations, statistics of . . . . .	13, 94
Admission requirements,	
Graduate School . . . . .	115
Harvard College . . . . .	9
Professional schools . . . . .	9, 88
Scientific School . . . . .	20, 108
Aid to Students . . . . .	19, 20, 101
American Universities, Association of . . . . .	144
Ames Botanical Laboratory . . . . .	225
Appointment Committee . . . . .	10
Appointments . . . . .	290
Architecture, new building for Department of . . . . .	21, 44, 45, 110
ARNOLD ARBORETUM, report on . . . . .	83, 281
ARTS AND SCIENCES, Faculty of,	
Report on . . . . .	51
Appointments . . . . .	290
Instruction . . . . .	51-82
Instruction by Doctors of Philosophy . . . . .	77
Summer courses . . . . .	77
Athletic Sports,	
Committee on Regulation of . . . . .	18, 304
Effect of success or failure in . . . . .	14
Number of students engaged in . . . . .	18
Austin, Edward, Fellowships . . . . .	49
Austin Hall, needed enlargement of . . . . .	24
Bachelor of Arts, degree of . . . . .	9, 10, 83
Statistics relating to graduation in less than four years . . . . .	309
Bachelor of Science, degree of . . . . .	21
Beneficiary aid . . . . .	19, 20, 101
Bertram Hall . . . . .	41, 287
BOTANIC GARDEN, report on . . . . .	83, 225
Buildings newly erected . . . . .	45
BUSSEY INSTITUTION,	
Report on . . . . .	27, 191
Appointments . . . . .	301
CHEMICAL LABORATORY,	
Report on . . . . .	233
Crowded condition of . . . . .	164, 233

	PAGE
COLLEGE Entrance Examination Board of the Middle States and Maryland . . . . .	100
Coolidge, T. J., gift of . . . . .	35, 239
Cuban Summer School . . . . .	42
Teachers in . . . . .	813
Deaths . . . . .	5, 149, 229
Degrees . . . . .	9
Number of, conferred in 1899, 1900 and 1901 . . . . .	305
DENTAL SCHOOL,	
Report on . . . . .	26, 188
Appointments . . . . .	300
Changes in teaching staff . . . . .	185
Enrolment . . . . .	183
Instruction . . . . .	183
Record of work done in Operative department, Infirmary and Mechanical department . . . . .	184
DIVINITY SCHOOL,	
Report on . . . . .	23, 149
Appointments . . . . .	269
Classification of students by length of residence, and by colleges and seminaries whence they came . . . . .	150
Faculty, changes in . . . . .	149
Enrolment, 1876-1901 . . . . .	150
Instruction . . . . .	152
Library . . . . .	155
Summer School of Theology . . . . .	151
Discipline . . . . .	100, 111
Doctor of Philosophy, degree of . . . . .	23
Age of candidates for . . . . .	23, 134
Requirements for . . . . .	145
Academic history of recipients of, 1901 . . . . .	131
Theses of candidates for, publication of . . . . .	22, 146
Doctors of Philosophy, instruction by . . . . .	77
Endowment, increase of . . . . .	49
Engineering, new building for . . . . .	21, 110
Everett, C. C., death of . . . . .	6
Examination Proctors, Board of . . . . .	303
Fees charged for taking higher degrees, and for taking A. B. or S. B. in one, two, or three years . . . . .	49
Fellowships . . . . .	19, 20
Fenn, W. W. . . . .	24
Finances . . . . .	48
Fiske, John, death of . . . . .	5
FOGG ART MUSEUM, report on . . . . .	40, 278
GEOLOGY AND GEOGRAPHY, Department of, report on . . . . .	38, 39, 262
Gifts . . . . .	26, 33, 35, 40, 44, 45, 46, 101, 162, 196, 225, 232, 239, 254, 255, 271, 273, 274, 275, 279, 287
Goodwin, W. W., resignation of . . . . .	7
GORE HALL, no more room for books in . . . . .	29
Gore Fund . . . . .	29
Göttingen, University of, Assistant Professor Richards invited to . . . . .	33

	PAGE
<b>GRADUATE SCHOOL,</b>	
Report on . . . . .	21, 113
Administrative Board . . . . .	113, 302
Admission requirements . . . . .	115
Age of students recommended for degrees . . . . .	22, 134
Birthplaces of students . . . . .	128
Colleges and universities whence students came and degrees held . . . . .	120
Colleges and universities represented by four or more graduates . . . . .	125
Fellowships and scholarships, applications and appointments . . . . .	141
Fellowships and scholarships, holders of . . . . .	136
Instructorships and assistantships held by students in . . . . .	144
Migration of students . . . . .	22, 127, 145
Number of A.B.'s, A.M.'s, S.M.'s, and Ph.D.'s held by members . . . . .	124
Number of students and their classification by amount of work taken, by departments of study, by length of residence, and by degrees held . . . . .	114
Recommendations for degrees, number of . . . . .	129
Residences of students . . . . .	128
Theses, publication of . . . . .	22, 146
<b>GRAY HERBARIUM, report on . . . . .</b>	<b>33, 222</b>
<b>HARVARD COLLEGE,</b>	
Report on . . . . .	20, 90-106
Administrative Board . . . . .	100, 302
Admission examination statistics . . . . .	13, 94
Discipline . . . . .	100
"Dropped" Freshmen . . . . .	92
Enrolment . . . . .	90
Highest scholars, list of . . . . .	102
Scholarships, need of . . . . .	20, 101
Special Students, falling off in number of . . . . .	90
<b>HARVARD UNION . . . . .</b>	<b>45, 105, 304</b>
Hooper, E. W., death of . . . . .	5
Hunnewell, H. H., gift of . . . . .	225
Hunnewell, Walter, gift of . . . . .	255
Hurlbut, B. S. . . . .	10
Illness . . . . .	19, 111, 307, 308
<b>JEFFERSON PHYSICAL LABORATORY, report on . . . . .</b>	<b>35, 237</b>
Kimball, Mrs. David P., gift of . . . . .	287
Langdell, C. C., resignation of . . . . .	7
<b>LAW SCHOOL,</b>	
Report on . . . . .	24, 157
Appointments . . . . .	296
Instruction . . . . .	158
Library . . . . .	160
Number of College Graduates registered each year, 1890-1901 . . . . .	157
<b>LAWRENCE SCIENTIFIC SCHOOL,</b>	
Report on . . . . .	20, 107
Administrative Board . . . . .	302
Admission requirements . . . . .	20, 107, 108, 109
Enrolment . . . . .	107
General Science Group, decrease in resort to . . . . .	110

	PAGE
Mining and Metallurgy Group, increased resort to . . . . .	110
Professional career, early preparation for . . . . .	21, 111
<b>LIBRARY,</b>	
Report on . . . . .	28, 192
Admission to stack . . . . .	204
Accessions . . . . .	28, 195, 196
Archives . . . . .	220
Book-plates, theft of . . . . .	194
Cataloguing, costliness of . . . . .	31, 215
Catalogue Department . . . . .	212
Coin collection . . . . .	199
Collection of pictures illustrating College history and topography . . . . .	198
Coöperative cataloguing . . . . .	214
Count of books, correction in . . . . .	196
Crowded condition of . . . . .	29, 192
Expenditures of . . . . .	28
Financial condition . . . . .	217
Gifts and purchases . . . . .	196
Library of Congress, cataloguing facilities offered by . . . . .	31, 215, 216
Number of gifts, 1895-1901 . . . . .	195
Ordering Department . . . . .	217
Radcliffe College, books loaned to . . . . .	206
Reference libraries . . . . .	199
Reserved books . . . . .	202
Shelf Department . . . . .	207
Storing books, new method of . . . . .	30, 31
Sunday use of reading-room . . . . .	206
Use of books . . . . .	202, 205
Library of Congress, cataloguing facilities offered by . . . . .	31, 215, 216
Lyman, C. P. . . . .	27
Master of Arts, degree of . . . . .	22
As conferring suffrage for Overseers . . . . .	48
<b>MEDICAL SCHOOL,</b>	
Report on . . . . .	163
Administrative Board . . . . .	163
Anatomy . . . . .	25, 165
Appointments . . . . .	297
Bacteriology . . . . .	166
Chemistry . . . . .	168
Clinical Medicine . . . . .	172
Comparative Pathology . . . . .	170
Endowment of . . . . .	50
Histology and Embryology . . . . .	166
Hygiene . . . . .	172
Instruction . . . . .	175
Museum . . . . .	172
New buildings for . . . . .	26, 162
Pathology . . . . .	169
Pharmacology and Therapeutics . . . . .	169
Physiology . . . . .	168

	PAGE
Scholarships and fellowships . . . . .	174
Statistics of admission, attendance, and final examinations . . . . .	178-181
Surgery . . . . .	171
Summer courses . . . . .	178, 182
Theory and Practice . . . . .	172
<b>MEDICINE, FACULTY OF,</b>	
Report on . . . . .	161
New buildings . . . . .	161
Recommendations for degrees . . . . .	161
<b>MEMORIAL HALL, improvements in . . . . .</b>	<b>43</b>
<b>Mexican and Central American Research, fund for the encouragement of . . . . .</b>	<b>29</b>
<b>McKenzie, Rev. Alexander, resignation of . . . . .</b>	<b>8</b>
<b>Migration of Graduate Students . . . . .</b>	<b>22</b>
<b>MINERALOGICAL MUSEUM and LABORATORIES OF MINERALOGY and PETROGRAPHY, report on . . . . .</b>	<b>41, 284</b>
<b>Morgan Fellowships discontinued . . . . .</b>	<b>48</b>
<b>Morgan, J. P., gift of . . . . .</b>	<b>26, 162</b>
<b>MUSEUM OF COMPARATIVE ZOOLOGY,</b>	
Report on . . . . .	38, 258
Library changes . . . . .	38, 211
Publications of . . . . .	306
<b>MUSEUM OF FINE ARTS, Trustees of . . . . .</b>	<b>304</b>
<b>New buildings . . . . .</b>	<b>45</b>
<b>Newell Boat Club . . . . .</b>	<b>18</b>
<b>OBSERVATORY,</b>	
Report on . . . . .	37, 242
New building needed for uses of . . . . .	
Stellar photographs at the . . . . .	37
<b>Overseers, suffrage for . . . . .</b>	<b>47</b>
<b>Peabody, F. G. . . . .</b>	<b>28</b>
<b>PEABODY MUSEUM,</b>	
Report on . . . . .	39, 267
Needed enlargement of . . . . .	40
Serpent Mound Park . . . . .	278
<b>Pennsylvania, University of, Veterinary Department . . . . .</b>	<b>27</b>
<b>Philosophy, Division of, proposed building for . . . . .</b>	<b>36</b>
New building for Division of . . . . .	241
<b>Physical Training, Summer course in . . . . .</b>	<b>48</b>
<b>Physics, advance in knowledge of . . . . .</b>	<b>35</b>
[Physics]. See also Jefferson Physical Laboratory.	
<b>Pierce Hall . . . . .</b>	<b>45</b>
<b>Preachers to the University . . . . .</b>	<b>304</b>
<b>President, five months' absence of . . . . .</b>	<b>46</b>
<b>Princeton, athletic sports between Yale and . . . . .</b>	<b>17</b>
<b>Proctors . . . . .</b>	<b>302</b>
<b>Professional Schools, standard of . . . . .</b>	<b>9</b>
Requirements for admission . . . . .	88
<b>PSYCHOLOGICAL LABORATORY, report on . . . . .</b>	<b>240</b>
<b>RADCLIFFE COLLEGE, report on . . . . .</b>	<b>41, 285</b>
<b>Research and Instruction, relations of . . . . .</b>	<b>84</b>

	PAGE
Research, endowment of . . . . .	84
Resignations . . . . .	289
Richards, T. W. . . . .	88
Robinson Hall . . . . .	44, 45
Robinson, Mr. and Mrs. Nelson, gift of . . . . .	21, 44, 45, 110
Rowing . . . . .	18
"Sabbatical year" . . . . .	18
Scholarships . . . . .	19, 20, 101
Secondary Schools, improvement of . . . . .	9, 10
Secretary to the President, appointment of . . . . .	47
SEMITIC MUSEUM, report on . . . . .	40, 45, 275
SOLDIER'S FIELD, improvements on . . . . .	18
Observation stands on . . . . .	19
Special Students, Scientific School . . . . .	20
Stillman Infirmary . . . . .	45, 46
SUMMER SCHOOL . . . . .	77
Summer School of Theology . . . . .	24, 151
Thayer, J. H., resignation of . . . . .	7
Three-year course for A.B. . . . .	10, 88, 309
Theses, printing of . . . . .	22, 146
Treasurer's Statement, improved arrangement of . . . . .	50
VETERINARY HOSPITAL . . . . .	189
VETERINARY SCHOOL,	
Report on . . . . .	26, 187
Appointments . . . . .	301
Closing of . . . . .	162, 187
Instruction provided for remaining students at University of Pennsylv-	
vania . . . . .	188
Walcott, Dr. H. P., Acting President . . . . .	46, 301
Gift of . . . . .	46
Wolcott, Roger, bequest of . . . . .	274
Weld Boat Club . . . . .	18
Yale, athletic sports between Harvard and . . . . .	15
Athletic sports between Princeton and . . . . .	17
ZOOLOGICAL LABORATORY . . . . .	89
Report on . . . . .	257

# TREASURER'S STATEMENT.



1901.





## TREASURER'S STATEMENT.

—♦—

TO THE BOARD OF OVERSEERS OF HARVARD COLLEGE : —

The Treasurer of the College submits the Annual Statement of the financial affairs of the University, for the year ending July 31, 1901, in the usual form.

The Funds separately invested, with the income thereof, are as follows : —

	Principal. July 31, 1901.	Income.
<b>UNIVERSITY.</b>		
<b>George B. Dorr,</b>		
University Houses and Lands, . . . . .	\$115,966.56	\$8,515.08
<b>George Draper (part),</b>		
University Houses and Lands, . . . . .	8,249.04	142.88
<b>John Cowdin,</b>		
Real Estate, Washington St., North, Boston, . . .	22,000.00	2,042.46
<b>John C. Gray,</b>		
University Houses and Lands, . . . . .	25,000.00	757.76
<b>Insurance and Guaranty,</b>		
University Houses and Lands, . . . . .	182,288.80	3,938.59
<b>Walter Hastings,</b>		
Real Estate, Sacramento St., Cambridge, . . . .	20,000.00	537.39
<b>Joseph Lee,</b>		
University Houses and Lands, . . . . .	10,000.00	308.11
<b>Francis E. Parker,</b>		
University Houses and Lands, . . . . .	118,817.44	3,449.88
<b>William F. Weld,</b>		
University Houses and Lands, . . . . .	100,000.00	3,031.07
<b>COLLEGE.</b>		
<b>Pennoyer Scholarships (part),</b>		
Pennoyer Annuity in England, . . . . .	4,444.44	117.68
<b>Jonathan Phillips' Gift,</b>		
\$10,000 City of Boston 3½'s, . . . . .	10,000.00	350.00
<b>Professorship of Hygiene (part),</b>		
Policy of Mass. Hospital Life Insurance Co., . .	5,000.00	200.00
80 shares Chicago, Burlington & Quincy R.R., . .	15,681.85	
<b>Scholarship of the Class of 1883,</b>		
\$5,000 Brookline Gas Light Co. Gen'l M. 5's, . .	5,000.00	250.00
<b>Stoughton Scholarship (part),</b>		
Real Estate in Dorchester, . . . . .	1,294.80	
Amounts carried forward, . . . . .	\$583,741.93	\$18,635.75

Amounts brought forward, . . . . .	\$588,741.98	\$18,685.75
<b>Samuel Ward's Gift,</b>		
Ward's (Bumkin) Island, Boston Harbor, . . .		1.00
<b>Henry C. Warren (part),</b>		
200 shares West End Street Railway, preferred (sold during year), . . . . .		30.00
64 " Boston Elevated Railway (sold during year), . . . . .		144.00
39 " First National Bank (sold during year),		156.00
84 " Boston & Albany R. R. " " "		357.00
<b>David Ames Wells (part),</b>		
\$4,000 Adams Express Co. Deb. 4's of 1948, . . . .	4,200.00	
2,000 Buffalo City Gas Co. 1st M. 5's of 1947, . .	1,500.00	
1,000 The Electric Corporation 7's of 1992, . . .	1,000.00	
50 shares Cleveland & Pittsburg R.R., . . . . .	4,750.00	
20 " Illinois Central R.R., . . . . .	2,800.00	
17 " Manhattan R'y, . . . . .	2,159.00	17.00
15 " Northern Pacific R'y, preferred, . . . . .	1,455.00	15.00
21 " Pennsylvania R.R., . . . . .	1,556.00	
40 " Pittsburg, Fort Wayne & Chicago R.R.,	7,600.00	
20 " West Virginia Central & Pittsburg R'y,	1,600.00	
33 " The Pullman Co., . . . . .	7,029.00	
40 " Adams Express Co., . . . . .	6,560.00	
25 " Illinois & Miss. Telegraph Co., . . . . .	875.00	25.00
25 " Northwestern " " " . . . . .	1,525.00	
50 " Western Union " " " . . . . .	4,650.00	62.50
10 " The Electric Corporation, . . . . .	.40	
8 " General Electric Co., . . . . .	1,816.00	16.00
8 " Buffalo City Gas Co., . . . . .	64.00	
4 " American Light & Traction Co., . . . . .	60.00	
16 " " " " " " pref.,	1,520.00	
83 " American Surety Co., . . . . .	7,677.50	83.00
10 " Morton Trust Co., . . . . .	7,250.00	
10 " New York Security & Trust Co., . . . . .	8,000.00	
11 " Walter A. Wood M. & R. Machine Co.,	550.00	
16 " Western Gas Co. (sold during year), . . .		48.00
1 share New York Evening Post Publishing Co.,	600.00	

## LIBRARY.

<b>Ichabod Tucker (part),</b>		
Policy of Mass. Hospital Life Insurance Co., . . .	5,000.00	200.00

## LAW SCHOOL.

<b>James Barr Ames Prize (part),</b>		
Personal Note, . . . . .	2,800.00	116.00
Amounts carried forward, . . . . .	\$668,839.83	\$19,905.25

Amounts brought forward, . . . . . \$666,389.88 \$19,905.35

**MEDICAL SCHOOL.**

<b>Calvin Ellis (part),</b>		
120 shares Old Colony R. R. (sold during year), . .		210.00
156 " New York, New Haven & Hartford R. R. (sold during year), . . . . .		812.00
150 " Boston & Albany R.R. (sold during year),		637.50
50 " Boston & Lowell R.R. " " "		200.00
91 " Boston & Maine R. R., preferred (sold during year), . . . . .		273.00
200 " Chicago, Burlington & Quincy R. R., .	26,585.00	1,800.00
8 " Old Boston National Bank (sold during year), . . . . .		16.00
17 " Merchants National Bank (sold during year), . . . . .		51.00
Interest on receipt for sale of Boston & Lowell R. R. stock, . . . . .		6.75
Real Estate in Boston, . . . . .	26,462.80	633.59
<b>Lucy Ellis (part),</b>		
Real Estate in Eden, Bar Harbor, Maine, . . . .	10,000.00	
<b>George C. Shattuck (part),</b>		
\$25,000 Kansas City, Fort Scott & Memphis R. R. Cons. M. 6's, . . . . .	30,500.00	

**OBSERVATORY.**

<b>Advancement of Astronomical Science (part),</b>		
30 shares Massachusetts Electric Companies, pref.,	2,781.90	
10 " New York, New Haven & Hartford R. R.,	2,154.80	
20 " West End Street Railway, . . . . .	1,934.80	

**PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY  
AND ETHNOLOGY.**

<b>Peabody Building (part),</b>	} \$54,000 Kansas & Mis- souri R. R. 1st M. 5's,	{ 11,512.72 19,218.64 19,218.64	623.83 1,038.84 1,038.84
<b>Peabody Collection (part),</b>			
<b>Peabody Professor (part),</b>			
<b>Thaw (part) (\$8.48 deducted from income for sinking premium),</b>			
\$20,000 Girard Point Storage Co. 1st M. 3½'s, . . .	20,380.54		691.52

**SPECIAL FUNDS.**

<b>Bussey Trust,</b>		
Real Estate, . . . . .	392,710.18	19,789.52
<b>Robert Troup Paine (accumulating),</b>		
\$43,000 Massachusetts 3½'s (\$165.60 deducted from income for sinking premium), . . . . .	45,122.18	1,339.40
<b>Fund of the Class of 1834,</b>		
Policy of Mass. Hospital Life Insurance Co., . . .	1,000.00	40.00
Amounts carried forward, . . . . .	\$1,277,872.08	\$48,105.58

Amounts brought forward, . . . . .	\$1,277,872.08	\$48,105.53
<b>Fund of the Class of 1844,</b>		
Policy of Mass. Hospital Life Insurance Co., . . .	6,500.00	260.00
<b>Fund of the Class of 1853,</b>		
Policy of Mass. Hospital Life Insurance Co., . . .	3,725.00	149.00
<b>Charles L. Hancock Bequest (part),</b>		
Real Estate in Chelsea, . . . . .	710.00	
<b>Calvin and Lucy Ellis Aid (part),</b>		
Real Estate in Boston, . . . . .	26,462.80	633.59
10 shares Improved Dwelling House Association (sold during year), . . . . .		10.00
<b>Price Greenleaf. (\$961.20 deducted from income for sinking premiums.) The total amount of this Fund is \$719,291.31, which is invested as follows:—</b>		
\$12,200 Rutland R. R. 6's, . . . . .	12,443.99	569.83
3,000 Chicago, Burl. & Quincy R. R. 4's, . . . .	2,880.00	120.00
290 shares Northern R. R. (N. H.), . . . . .	29,290.00	1,740.00
800 " Rutland " preferred, . . . . .	28,000.00	3,200.00
317 " Boston & Maine R. R., . . . . .	48,724.00	2,219.00
360 " Boston & Lowell " . . . . .	46,800.00	2,880.00
237 " Fitchburg R. R., preferred, . . . . .	22,306.27	1,185.00
355 " Old Colony " . . . . .	63,190.00	2,485.00
161 " Chicago, Burl. & Quincy R. R., . . . .	20,188.55	983.50
20 " N. Y. Central & Hudson River R. R., . .	2,260.00	100.00
52 " West End Street Railway, preferred, . .	4,305.56	208.00
34 " Central Vermont R'y, . . . . .	428.72	
15 " Boston Real Estate Trust, . . . . .	20,703.75	675.00
100 " Paddock Bldg. Trust (65% paid in), . .	6,500.00	220.00
<b>\$34,000 New York Central &amp; Hudson River R. R. (Michigan Central Collateral) 3½'s, . . . .</b>	<b>28,412.10</b>	<b>1,190.00</b>
43,500 Central Vermont R'y 1st M. 4's, . . . .	37,845.00	1,740.00
50,000 Union Pacific R. R. 1st M. & L. G. 4's, . .	44,625.00	2,000.00
2,000 Chicago, Burl. & Quincy R. R. 3½'s, . . .	2,000.00	70.00
26,000 Burl. & Mo. R. R. in Neb. non ex. 6's, . .	27,438.97	1,208.86
50,000 Metropolitan Tel. & Tel. Co. 1st M. 5's, . .	49,750.00	2,500.00
25,000 New England " " " 6's, . . . . .	25,371.09	1,425.78
50,000 Chic. Junc. R'y & Union Stock Yards 5's, .	47,000.00	2,500.00
70,000 Broadway Realty Co. Purchase money 1st M. 5's, . . . . .	74,697.34	3,315.78
70,000 American Bell Telephone Co. 4's, . . . .	70,902.65	2,671.05
Cash in New England Trust Co., . . . . .	3,228.32	62.26
<b>Totals, . . . . .</b>	<b>\$2,034,561.14</b>	<b>\$84,426.68</b>

The other Funds are invested as a whole. The general investments are stated in detail on pages 38, 39, and 40 of this report. The usual summary of them, and of their income, is as follows:—

Investments.	Principal, Aug. 1, 1900.	Principal, July 31, 1901.	Income.
Notes, Mortgages, &c., . . . . .	\$913,000.00	\$983,000.00	\$47,989.35
United States Bonds, . . . . .	467,690.80	464,955.88	13,265.08
Railroad Bonds, . . . . .	3,676,903.60	3,867,228.70	160,388.51
Sundry Bonds, . . . . .	1,412,182.60	1,512,037.89	62,667.51
Railroad Stocks, . . . . .	513,881.57	568,998.46	27,980.00
Manufacturing Stocks, . . . . .	39,022.29	39,022.29	4,161.00
Real Estate Trust Stocks, . . . . .	330,000.00	278,595.34	10,733.87
Real Estate, . . . . .	2,552,318.30	2,753,541.92	146,106.64
Brattle Street Reversion (1918), . .	1,015.00	1,015.00	
Advances to <b>Bussey Trust</b> , . . . . .	29,785.51	29,785.51	1,489.28
"    " <b>Calvin &amp; Lucy Ellis</b>			
Real Estate, . . . . .	166.32		8.32
"    "    Sch. of Veterinary Med.,	24,406.01	24,406.01	1,220.30
"    " <b>Peabody Museum of</b>			
Am. Archaeology and			
Ethnology, . . . . .	639.01	1,607.30	31.95
"    "    Botanic Department, . .	15,549.39	18,625.67	777.46
"    " <b>Gray Herbarium</b> , . . . . .	25.41		1.27
"    "    Dining Hall Association,	14,001.50	12,522.66	700.08
"    " <b>Randall Hall</b> " . . . . .	22,875.71	33,481.27	1,143.79
"    " <b>Botch Laboratory</b> , . . . . .		6,687.62	
"    "    Sundry Accounts, . . . . .	1,076.25		
Baring Brothers & Company, . . . . .	2,488.25	2,682.59	76.71
Term Bills due in October, . . . . .	229,150.09	236,731.08	
"    "    overdue, . . . . .	8,823.89	9,065.28	
Cash in Suffolk National Bank, . . . .	9,526.65	26,480.66	100.68
"    National Union Bank, . . . . .	157,002.63	185,570.67	3,794.02
"    Old Boston National Bank, . .	69,748.60		319.89
"    hands of Bursar, . . . . .	16,980.44	29,035.72	
Totals of general investments, . . . . .	\$10,507,759.82	\$11,084,977.47	\$482,905.71
Totals of special investments, . . . . .	2,106,688.37	2,034,561.14	84,426.68
Amounts, . . . . .	\$12,614,448.19	\$13,119,538.61	\$567,332.39

The sums of \$11,997.03 and \$1,135.28 have been deducted from the income of all bonds bought at a premium and held respectively as general and special investments, and have been applied, as the fair yearly repayment from income, towards sinking the whole of these premiums at the maturity of the bonds.

The net income of the general investments has been divided at the rate of  $4\frac{7}{100}$  per cent. among the Funds to which they belong, after allowing special rates to certain temporary Funds and balances. The fraction, which was \$299.63, has been placed as usual to the credit of the University account.

The rate of income compared with that for 1899-1900 shows an increase of fourteen one-hundredths of one per cent.

The following table shows the income available for the departments dependent upon the College proper, and the expenditures in those departments; the income and the expenditure for the Lawrence Scientific School and the College being combined in the College account:—

**Interest on Funds for**

University Salaries and Expenses, . . . . .	\$65,350.84
Library Salaries and Expenses (not books), . . . . .	24,554.18
College Salaries and Expenses, . . . . .	61,718.18
Gymnasium, and repairs on College buildings, . . . . .	none.
College Term Bills, . . . . .	484,974.00

**Sundry receipts, as follows:—**

Gifts for Salaries and Expenses, . . . . .	\$5,057.11		
Use of buildings (not University Houses and Lands), . . . . .	1,560.00		
Laboratory and other fees, &c., . . . . .	49,810.10		
Sales of catalogues, pamphlets, &c., . . . . .	3,877.20		
Repayments of loans, . . . . .	237.62		
Sundry receipts and repayments, . . . . .	436.76	60,978.79	\$697,575.99

**Expended for**

University Salaries and Expenses, . . . . .	\$84,829.37		
Library Salaries and Expenses (not books), . . . . .	42,525.89		
College Expenses, . . . . .	112,497.64		
College Salaries, for instruction, . . . . .	381,184.99		
Gymnasium Expenses, . . . . .	9,396.18		
Repairs, insurance and cleaning on College buildings not valued in Treasurer's books, . . . . .	49,637.66		
Scholarships paid by the University, . . . . .	3,000.00		
“ “ “ College, . . . . .	3,250.00		
Exhibitions “ “ “ . . . . .	450.00		
Deficit in the School of Veterinary Medicine for 1900- 1901, assumed by the University, . . . . .	8,456.45	695,228.08	
Balance, showing the surplus for the year, which has been credited to Insurance and Guaranty Fund, . . . . .			\$2,347.91

The University, College, Lawrence Scientific School, and Library accounts, taken together, after paying the Veterinary School deficit of \$8,456.45, show a surplus of \$2,347.91. In 1899-1900 there was a deficit of \$36,669.51.

The Divinity School has a surplus of \$223.33. In 1899-1900 there was a deficit of \$642.84.

The Law School has a surplus of \$33,225.35. In 1899–1900 the surplus was \$32,870.16.

The Medical School has a surplus of \$7,609.83. In 1899–1900 the surplus was \$1,306.84.

The Dental School has a surplus of \$4,086.98. In 1899–1900 the surplus was \$4,885.70.

The Museum of Comparative Zoölogy used the income of its restricted Funds as required by the conditions of gift. It has a surplus of unrestricted income of \$2,453.50. In 1899–1900 the surplus was \$6,098.81.

The General Account of the Observatory has a surplus of \$543.44. In 1899–1900 the surplus was of \$2,431.64. The income of the Boyden Fund has been used for work in Peru, and the usual large gifts from Mrs. Draper have been used for the special research work of the Draper Memorial.

The Bussey Institution has a surplus of \$3,767.09, after paying \$2,454.34 towards the cost of new greenhouses. In 1899–1900 there was a surplus of \$6,794.85.

The Peabody Museum has a deficit of \$968.29. In 1899–1900 the deficit was \$115.81.

The Veterinary School has a deficit of \$8,456.45. In 1899–1900 the deficit was \$4,206.96.

*Gifts have been received during the year as follows:—*

GIFTS TO FORM NEW FUNDS OR INCREASE OLD ONES.

From an anonymous giver, \$2,370.80 in cash, and securities valued at \$30,500, to be added to the George C. Shattuck Fund in the Medical School.

From the anonymous giver of the Fund for the Professorship of Hygiene, securities valued at \$15,680, to be added to that Fund.

For the Arnold Arboretum Fund, additional, from

Thomas Allen . . . . .	\$500	Amount brought forward . . .	\$4,350
Mrs. F. L. Ames . . . . .	1,000	Wilder D. Bancroft . . . . .	10
Oliver Ames . . . . .	1,000	E. Pierson Beebe . . . . .	1,000
C. W. Amory . . . . .	1,000	A. S. Bigelow . . . . .	500
Anonymous . . . . .	500	Mrs. W. W. Blackmar . . . . .	50
Anonymous . . . . .	100	Mrs. Arthur W. Blake . . . . .	1,000
Anonymous . . . . .	250	William Brewster . . . . .	5
Amount carried forward . . .	\$4,350	Amount carried forward . . .	\$6,915

Amount brought forward . .	\$6,915	Amount brought forward .	\$37,240
Shepherd Brooks . . . . .	1,000	Thomas W. Lawson . . . . .	5,000
John C. Chaffin . . . . .	500	Mrs. Henry Lee . . . . .	1,000
F. W. Chapin . . . . .	5	Joseph Lee . . . . .	50
Philip A. Chase . . . . .	250	Mrs. Elizabeth R. Lyman, Tr.	250
James Coates . . . . .	500	Mrs. Henry A. Miles . . . . .	10
Mr. and Mrs. James M. Codman	1,000	J. Pierpont Morgan . . . . .	250
Miss Helen Collamore . . . . .	200	Louis Morris . . . . .	100
J. R. Coolidge . . . . .	1,000	Mrs. David Nevins . . . . .	100
Miss Sarah H. Crocker . . . . .	100	Grenville H. Norcross . . . . .	100
Henry P. Curtis . . . . .	10	Edward E. Norton . . . . .	5
F. Gordon Dexter . . . . .	1,000	William J. Palmer . . . . .	1,000
George Dexter . . . . .	500	George Foster Peabody . . . . .	500
Eben S. Draper . . . . .	1,000	S. E. Peabody . . . . .	1,000
H. C. Ernst . . . . .	10	David Pingree . . . . .	1,500
George F. Fabyan . . . . .	1,000	James M. Prendergast . . . . .	200
Miss Sarah B. Fay . . . . .	5,000	Mrs. Sarah E. Potter . . . . .	1,000
Desmond Fitzgerald . . . . .	50	Thomas E. Proctor . . . . .	500
Miss Cornelia A. French . . . . .	1,000	Mrs. J. H. Robbins . . . . .	10
Robert H. Gardiner . . . . .	25	S. W. Rodman . . . . .	25
Mrs. A. P. Gardner . . . . .	100	Miss Marian Russell . . . . .	200
George A. Gardner . . . . .	2,000	Stephen Salisbury . . . . .	100
John L. Gardner . . . . .	1,000	James Schouler . . . . .	25
Wendell P. Garrison . . . . .	5	Frederick C. Shattuck . . . . .	100
Mrs. W. H. Goodwin . . . . .	250	Mrs. Howland Shaw . . . . .	300
Mrs. G. G. Hammond . . . . .	500	Mrs. Robert G. Shaw . . . . .	100
Miss Ellen R. Hathaway . . . . .	50	A. Shuman . . . . .	100
Arthur Hunnewell . . . . .	250	Mrs. Bayard Thayer . . . . .	2,000
H. H. Hunnewell . . . . .	5,000	Mrs. Ezra R. Thayer . . . . .	25
Walter Hunnewell . . . . .	1,000	John E. Thayer . . . . .	3,000
Eben D. Jordan . . . . .	5,000	Miss M. S. Walker . . . . .	1,000
B. F. Keith . . . . .	20	Henshaw B. Walley . . . . .	5
Mrs. David P. Kimball . . . . .	1,000	John D. Williams . . . . .	500
Amount carried forward . .	\$37,240		\$57,295

From the estate of Lucius F. Billings, \$5,000, the income thereof to be used for scholarships "for the benefit of poor but deserving medical students in said Medical Department."

From the estate of Robert Charles Billings, \$7,500 additional, on account of his unrestricted bequest of \$100,000.

From Mrs. Arthur Blake, \$1,000, for establishing the F. B. Greenough Fund for Surgical Research.

For the Phillips Brooks House Endowment, from

Anonymous, through Edwin H. Abbot, Sec'y .	\$10,000.00
Francis H. Johnson . . . . .	500.00
Balance of subscriptions, through F. G. Peabody	6.66
	<u>\$10,506.66</u>



From members of the Class of 1868, \$1,275, to be added to the Free Bed Fund of the Class of 1868.

From the estate of Robert Henry Eddy, \$45,000, on account of his unrestricted residuary bequest.

From the estate of Calvin Ellis, \$5,000, the final payment on account of his bequest of \$50,000, the income thereof to be applied primarily towards the payment of certain expenses of such descendants of David Ellis and Beulah Newell, formerly of Dedham, and of John Ellis and Hannah Ellis, formerly of Walpole, as may be students in Harvard College; also \$48,488.39, the final payment of his residuary bequest, amounting to \$317,122.09, the income thereof to be used towards the increase of the salaries of certain professors in the Medical School to \$5,000 a year, and for other purposes in the Department of Medicine.

From the estate of Miss Lucy Ellis, in addition to previous receipts from her estate amounting to \$50,942.47 for the same purpose, real estate in the town of Eden, Bar Harbor, Me., valued at \$10,000, the income thereof to be used towards the increase of the salaries of certain professors in the Medical School to \$5,000 a year, and for other purposes in the Department of Medicine; also cash and securities amounting to \$48,401.47, the final payment of her residuary bequest amounting to \$108,801.47, the income thereof to be applied primarily towards the payment of certain expenses of such descendants of David Ellis and Beulah Newell, formerly of Dedham, and of John Ellis and Hannah Ellis, formerly of Walpole, as may be students in Harvard College.

From the estate of John Davis Williams French, his unrestricted bequest of \$5,000.

From Walter Hunnewell, \$5,000, in memory of Willard Peele Hunnewell, of the Class of 1904, to be used for the Museum of Comparative Zoölogy.

From Mr. and Mrs. Henry P. King, \$500, for establishing a Free Bed Fund for the Stillman Infirmary.

For the Henry Lee Professorship of History, or of some other branch of social science, additional, from

Elliot C. Lee . . . . .	\$25,000
Mrs. Henry Lee . . . . .	25,000
	<u>50,000</u>

From the estate of Henry L. Pierce, \$5,000 additional, on account of his unrestricted residuary bequest.

From an anonymous giver, \$4,681.80 in cash and \$45,318.20 in securities, to establish a Fund to be used eventually for the advancement of astronomical science.

From Mr. and Mrs. Nelson Robinson, \$200,000, to be added to their previous gift of \$100,000, to establish, in memory of their son, the Nelson Robinson Jr. Endowment Fund, in the Department of Architecture.

From the estate of Henry Saltonstall, \$50,000, for establishing, as a memorial of his son, the Gurdon Saltonstall Fund, the income to be used "for the maintenance of instruction in the liberal arts, whether for undergraduates or graduates, or for the support of students, undergraduates or graduates, who may need assistance and who by their good conduct and success in study may deserve the same"; also \$6,000 to be added to the Saltonstall Scholarship Fund, and \$3,000 to be added to the Leverett Saltonstall Scholarship Fund.

From the estate of Mrs. Henry Saltonstall, \$10,000, to be added to the Gurdon Saltonstall Fund, which was established under the will of her husband.

From William A. Wadsworth and Herbert Wadsworth, \$25,000, to be added to the Edward Austin Fund for Scholars and Teachers, and \$1,500, to be added to the Edward Austin Fund for the Bacteriological Laboratory of the Medical School.

From the estate of Mrs. Mary Ann P. Weld, \$2,000 additional, the final payment on account of her bequest of \$10,000, for establishing the Christopher M. Weld Scholarship.

From two members of the Wilder family, \$25,000, their final payment towards a fund of \$40,000, which they offered to give for the purpose of establishing a professorship in the Medical School "to be known forever as the Charles Wilder Chair"; the department of medicine which this chair shall represent to be named from time to time by the Corporation.

From Henry P. Walcott, \$2,500, to establish a fund, "the income of which shall be used for the purpose of assisting such

sick students of the University as may be admitted to the Stillman Infirmary for treatment, and are not able to meet its necessary charges.”

From the estate of David Ames Wells, \$1,335.21 in cash, and securities valued by the executor at \$76,816.90, on account of Mr. Wells's residuary bequest for establishing a prize and publication fund.

From the estate of Roger Wolcott, \$10,000, to be added to the J. Huntington Wolcott Fund, and \$10,000, to be added to the Huntington Frothingham Wolcott Fund. These Funds were established by Roger Wolcott in 1891 with a capital of \$10,000 each.

*The total amount of these gifts for capital account is \$826,669.43, as is also stated on page 30 of this report.*

#### GIFTS FOR IMMEDIATE USE.

From an anonymous giver, \$2,250, towards the payment of a salary in the College.

From anonymous givers, \$100, for the purchase of Norwegian photographs for the Department of Geology and Geography, in remembrance of Ole Bull.

From an anonymous giver, \$350, for the Ricardo Prize Scholarship for 1901-02.

From an anonymous giver, \$600, an unrestricted gift.

From an anonymous giver, \$304.10, for a microscope for the Department of the Medical School “devoted to the investigation of cancer under the trust fund created by the will of the late Caroline Croft.”

From Edwin F. Atkins, \$2,500 additional, “for the study of the improvement of sugar-cane and other tropical plants.”

From the Babcock-Wilcox Co., \$3,000, towards the cost of two boilers and a superheater for Pierce Hall.

From Mrs. C. M. Barnard, \$600, her eighteenth yearly payment for the Warren H. Cudworth Scholarships.

From F. P. Bonney, \$100, for the purchase of reference books for Professor Macvane's courses in government.

## For the Botanic Garden, from

Anonymous . . . . .	\$92.50
Anonymous . . . . .	180.00
Anonymous . . . . .	200.00
A. F. Estabrook . . . . .	100.00
Henry Graves . . . . .	100.00
C. G. Roebling . . . . .	100.00
J. E. Rothwell . . . . .	20.00
A. Shuman . . . . .	10.00
	<u>\$802.50</u>

Through Francis G. Peabody, \$45.48, the unexpended balance of a gift for furnishing the Shepard Room in Phillips Brooks House, to be added to the income of the Phillips Brooks House Endowment.

From W. E. Byerly, \$57.11, towards the cost of publishing the Annals of Mathematics in 1899-1900.

For the purchase of apparatus, books, etc., for the Laboratory of Comparative Pathology, from

George F. Fabyan . . . . .	\$250
Frederick C. Shattuck . . . . .	250
	<u>\$500</u>

For the instruction and maintenance of certain Cuban Teachers during a course at the Summer School of 1900, from

Miss K. L. Bates . . . . .	\$50.00
Mr. and Mrs. Joseph H. Beale, Jr. (additional) . . . . .	25.00
F. A. Blackmer (additional) . . . . .	100.00
Boston School Teachers (additional) . . . . .	3.00
Charles J. Glidden . . . . .	100.00
Walter E. Hayward . . . . .	5.00
Arthur H. Nichols . . . . .	50.00
R. . . . .	50.00
Mrs. Quincy A. Shaw . . . . .	185.40
Ten Cuban Teachers . . . . .	18.25
Undergraduates . . . . .	307.96
	<u>\$894.61</u>

From Harold J. Coolidge, \$50, the first of five annual gifts of \$50 each, offered by him for the purchase of books on the Chinese question, for the College Library.

From Mrs. Henry Draper, of New York, an additional sum of \$9,999.96, to be expended by the Director of the Observatory in prosecuting the researches in the photography of stellar

spectra, with which the late Dr. Henry Draper's name is honorably associated.

From Charles W. Eliot, \$63.90, for the Laboratory of Comparative Pathology.

For the purchase of wax models for the Embryological Laboratory, illustrating the development of the human ear, from

Clarence J. Blake . . . . .	\$15
Harris Kennedy . . . . .	40
Charles S. Minot . . . . .	15
	<u>70</u>

From Miss Kate Furbish, \$25, for the purchase of books for the Gray Herbarium Library.

For the purchase of a collection of portraits of David Garrick for the Library, as a memorial to the late Justin Winsor, from

Winthrop Ames . . . . .	\$100	Amount brought forward . . .	\$196
G. P. Baker . . . . .	25	A. H. Newman . . . . .	10
B. F. Bell . . . . .	10	J. A. Noyes . . . . .	10
Gordon Knox Bell . . . . .	20	Arthur Pier . . . . .	5
Gilman Collamore . . . . .	10	Franklin H. Sargent . . . . .	10
D. P. Griswold . . . . .	10	Albert Stickney . . . . .	10
J. H. Hyde . . . . .	10	P. B. Thompson . . . . .	5
A. D. Irving . . . . .	1	E. J. Wendell . . . . .	25
Edward King . . . . .	10	J. Wendell, Jr. . . . .	10
Amount carried forward . . .	<u>\$196</u>		<u>\$281</u>

From the Department of Germanic Languages and Literatures, \$500, part of the proceeds of a performance of Lessing's "Minna von Barnhelm" given in Sanders Theatre, to be added to the gifts for collections for a Germanic Museum.

From Mrs. Asa Gray, \$25.29, for binding periodicals in the Library of the Gray Herbarium.

For the Gray Herbarium, from

Walter B. Adams . . . . .	\$10	Amount brought forward . . .	\$150
Miss Mary S. Ames . . . . .	50	Francis S. Blake . . . . .	10
Anonymous . . . . .	5	William P. Blake . . . . .	10
Anonymous . . . . .	25	James C. Braman . . . . .	5
Howard P. Arnold . . . . .	25	Mrs. J. L. Bremer . . . . .	25
Louis Arnold . . . . .	5	Miss Sarah F. Bremer . . . . .	15
Walter C. Baylies . . . . .	10	Addison Brown . . . . .	10
Thomas P. Beal . . . . .	10	Edward I. Browne . . . . .	10
A. C. Bent . . . . .	10	Stephen Bullard . . . . .	10
Amount carried forward . . .	<u>\$150</u>	Amount carried forward . . .	<u>\$245</u>

Amount brought forward . . .	\$245	Amount brought forward . . .	\$800
Mrs. William S. Bullard . . .	10	Walter Hunnewell . . . . .	10
J. Elliot Cabot . . . . .	10	Mrs. Susan M. Jackson . . . . .	10
James B. Case . . . . .	10	William A. Jeffries . . . . .	10
H. D. Chapin . . . . .	10	Charles W. Jenks . . . . .	10
Charles F. Choate . . . . .	10	Bernard Jenney . . . . .	10
Mrs. Eliot C. Clarke . . . . .	10	Edward C. Johnson . . . . .	10
Miss Helen Collamore . . . . .	10	George G. Kennedy . . . . .	625
John T. Coolidge . . . . .	10	David P. Kimball . . . . .	10
Mrs. C. A. Cummings . . . . .	10	Mrs. David P. Kimball . . . . .	10
Charles P. Curtis . . . . .	10	Henry H. Kimball . . . . .	10
Mrs. Charles P. Curtis . . . . .	10	Lemuel C. Kimball, Jr. . . . .	10
Henry P. Curtis . . . . .	10	Mrs. H. M. Laughlin . . . . .	10
Louis Curtis . . . . .	10	George C. Lee . . . . .	10
C. H. Dalton . . . . .	10	J. R. Leeson . . . . .	50
Samuel B. Dana . . . . .	10	George V. Leverett . . . . .	25
Edward S. Dodge . . . . .	10	Mrs. George Linder . . . . .	10
Mrs. Samuel Downer . . . . .	10	Mrs. Mary E. Lodge . . . . .	15
Mrs. J. W. Elliot . . . . .	10	Augustus P. Loring . . . . .	10
E. M. Farnsworth . . . . .	10	Miss Katharine P. Loring . . . . .	10
J. S. Fay, Jr. . . . .	35	Miss Louisa P. Loring . . . . .	10
Mrs. J. N. Fiske . . . . .	10	William Caleb Loring . . . . .	15
S. W. Fletcher . . . . .	10	Mrs. T. K. Lothrop . . . . .	10
Miss Amy Folsom . . . . .	10	Arthur T. Lyman . . . . .	10
Mrs. W. H. Forbes . . . . .	15	Haslett McKim . . . . .	20
Francis A. Foster . . . . .	10	Miss E. F. Mason . . . . .	10
Francis C. Foster . . . . .	10	Albert Matthews . . . . .	5
Mrs. Francis C. Foster . . . . .	10	Mrs. Samuel T. Morse . . . . .	10
A friend . . . . .	5	William A. Munroe . . . . .	10
A friend . . . . .	20	Grenville H. Norcross . . . . .	10
C. W. Galloupe . . . . .	10	Mrs. Otis Norcross . . . . .	10
Robert H. Gardiner . . . . .	10	Peder Olsen . . . . .	10
W. A. Gardner . . . . .	10	Miss Emily L. Osgood . . . . .	10
George A. Goddard . . . . .	10	Miss E. S. Parkman . . . . .	10
Reginald Gray . . . . .	10	Frank E. Peabody . . . . .	10
Mrs. Mary L. Greenleaf . . . . .	25	F. H. Peabody . . . . .	500
John Greenough . . . . .	10	Miss Mary R. Peabody, trustee	10
Mrs. H. S. Grew . . . . .	25	Mrs. J. C. Phillips . . . . .	25
George W. Hammond . . . . .	10	Henry Pickering . . . . .	10
Mrs. George W. Hammond . . . . .	10	Mrs. Henry Pickering . . . . .	10
Charles Head . . . . .	10	Mrs. D. L. Pickman . . . . .	10
Augustus Hemenway . . . . .	10	David Pingree . . . . .	10
J. P. B. Henshaw . . . . .	10	Mrs. W. B. Potter . . . . .	500
E. A. Hills . . . . .	10	Miss Elizabeth C. Putnam . . . . .	10
Robert C. Hooper . . . . .	20	George Putnam . . . . .	50
Clement S. Houghton . . . . .	10	Edward L. Rand . . . . .	10
Miss Katharine Horsford . . . . .	10	Miss Sarah E. Read . . . . .	20
Henry S. Howe . . . . .	10	Mrs. W. H. Reed . . . . .	10
Henry S. Hunnewell . . . . .	10	George E. Richards . . . . .	10
Amount carried forward . . .	\$800	Amount carried forward . . .	\$3,010

Amount brought forward . . .	\$3,010	Amount brought forward . . .	\$3,200
S. W. Rodman . . . . .	10	C. W. . . . .	50
Mrs. W. B. Rogers . . . . .	10	Miss Caroline E. Ward . . . . .	10
Denman W. Ross . . . . .	10	Mrs. S. D. Warren . . . . .	10
Mrs. M. Denman Ross . . . . .	10	Frank G. Webster . . . . .	10
Mrs. Waldo O. Ross . . . . .	10	Mrs. Frank G. Webster . . . . .	10
J. E. Rothwell . . . . .	10	Mrs. Charles W. Welch . . . . .	10
Mrs. Robert S. Russell . . . . .	10	George W. Weld . . . . .	10
S. D. Sargeant . . . . .	10	Mr. & Mrs. Walter Wesselhoeft . . . . .	10
Mrs. Winthrop Sargent . . . . .	10	George R. White . . . . .	500
George O. Sears . . . . .	10	S. B. Whiting . . . . .	10
Francis Shaw . . . . .	10	Mrs. Edward Whitney . . . . .	80
Mrs. G. H. Shaw . . . . .	20	Emile F. Williams . . . . .	200
David N. Skillings . . . . .	10	Edward S. Wood . . . . .	10
Isaac Sprague . . . . .	10	Mrs. Charlotte F. Woodman . . . . .	10
Mrs. Isaac Sprague . . . . .	10	Miss Mary Woodman . . . . .	10
F. P. Sprague . . . . .	10	Henry Woods . . . . .	10
Charles H. Tweed . . . . .	10	Charles L. Young . . . . .	10
B. Vaughan . . . . .	10		
Amount carried forward . . .	\$3,200		\$4,110

From Mrs. Emil C. Hammer, in memory of her husband, formerly Danish Consul at Boston, \$500 additional, for the purchase of Scandinavian books.

From the Harvard Club of New York, \$2,500 additional, towards building the new boat-house.

From Francis L. Higginson, \$10,000, for the purchase and arrangement of a piece of land for summer work in connection with the Scientific School, and \$10,000 for uses in connection with the Harvard Union; any residue not required for those purposes to be used for furnishing Pierce Hall.

From James J. Higginson, \$200, for the purchase of land in New Hampshire for summer surveying.

From Samuel Hill, \$50, for the use of the Department of Political Economy in such manner as the Chairman may direct.

From an anonymous giver, \$250, for an additional course in History in 1900-01.

From the estate of John Holmes, \$13.77, the final payment on account of his bequest of \$300 for the benefit of poor students.

From Horatio A. Lamb, \$100, for the purchase of books and music for the library of the Division of Music.

For the purchase of books for the College Library, from

Archibald Cary Coolidge . . . . .	\$3,764
Dante Society . . . . .	25
Saturday Club of Boston . . . . .	500
John Harvey Treat . . . . .	300
	<u>\$4,589</u>

From James Loeb, \$100, for the purchase of publications of Labor Unions, and \$300 on account of the Charles Eliot Norton Fellowship for 1901-02.

For the purchase of books for the Lowell Memorial Library, from

M. L. Cate . . . . .	\$3
A. R. Marsh . . . . .	50
	<u>\$52</u>

From Theodore Lyman, \$500, to be used for any purpose connected with the Jefferson Physical Laboratory approved by Professor Trowbridge, and \$500 for improving the ventilation of room 41 therein, and for any other purpose connected with the Laboratory approved by Assistant Professor Sabine.

For the purchase of a collection of mammal skins for the Museum of Comparative Zoölogy, additional, from

Anonymous . . . . .	\$620	Amount brought forward . .	\$1,520
William Brewster . . . . .	100	D. L. Pickman . . . . .	300
Louis Cabot . . . . .	500	Francis Shaw . . . . .	50
Arthur F. Estabrook . . . . .	100	W. S. Spaulding . . . . .	50
Charles F. Folsom (additional) . . . . .	50	Mrs. Bayard Thayer . . . . .	500
Henry S. Hunnewell . . . . .	50	W. P. Wharton . . . . .	200
A. Lawrence Lowell . . . . .	100	Walter Woodman . . . . .	100
Amount carried forward . .	<u>\$1,520</u>		<u>\$2,720</u>

From the Massachusetts Society for Promoting Agriculture, its fourth annual payment of \$2,500, "to be expended at the Arnold Arboretum by the Director, to increase the knowledge of Trees."

From the Division of Mathematics, \$15, for the purchase of books for that Department.

From A. H. Parker, \$50, for the purchase of books for the Francis James Child Memorial Library.

From Francis H. Peabody, \$100, "to enable the Gray Herbarium to have certain type specimens examined and sketched at the Royal Botanical Museum of Berlin."



For the Peabody Museum of American Archaeology and Ethnology, from

Mrs. N. E. Baylies . . . . .	\$50
Clarence B. Moore . . . . .	500
	<u>\$550</u>

From James J. Putnam and Moorfield Storey, trustees, \$500 towards a salary in the Medical School.

From Mr. and Mrs. Nelson Robinson, who have previously given, in memory of their son, Nelson Robinson, Jr., of the Class of 1900, \$115,000 for the erection of an Architecture Building and \$20,000 for the purchase of books, prints, casts, etc., \$30,000 additional for the Architecture Building.

From Jacob H. Schiff, \$10,000 additional, for "the erection of a building to house the Semitic collection," and \$10,000 for its furnishing.

From Charles Liebmann, James Loeb, Luther Mott, and Percy S. Straus, \$75, for a course of public lectures under the auspices of the Semitic Department.

Towards the salary of the Assistant Professor of Slavic Languages and Literatures for five years from September 1, 1901, from

J. R. Coolidge . . . . .	\$5,000
Russell Gray . . . . .	250
	<u>\$5,250</u>

From Theobald Smith, \$25, towards the expenses for research in the Laboratory of Comparative Pathology.

From the Society for Promoting Theological Education, \$3,704.05, for the library of the Divinity School.

For additions to The Soldier's Field, from

James J. Higginson . . . . .	\$2,500
Mrs. James J. Higginson . . . . .	2,500
	<u>\$5,000</u>

For the South End House Fellowship, from

Charles B. Barnes, Jr. . . . .	\$50	Amount brought forward . . .	\$300
Julian L. Coolidge . . . . .	100	Edward W. Grew . . . . .	100
William A. Dupee . . . . .	100	Randolph C. Grew . . . . .	100
George S. Fiske . . . . .	50	James A. Lowell . . . . .	100
Amount carried forward . . .	\$300		<u>\$600</u>

From Oscar F. Straus, \$100, for the benefit of needy students.

For the Surgical Laboratory, from

C. W. Amory . . . . .	\$200
W. S. Bigelow . . . . .	200
George Baty Blake	} . . . . . 500
Francis Stanton Blake	
Lowell Blake	

From Ezra R. Thayer, \$25, to be added to the gifts for collections for a Germanic Museum.

From an anonymous giver, \$500, for a Travelling Fellowship in Botany for 1900-01.

*The total amount of these gifts for immediate use is \$129,497.77, as is also stated on page 28 of this report.*

CHARLES F. ADAMS, 2D, *Treasurer.*

Boston, November 4, 1901

# ACCOUNTS.

*General Statement of Receipts and Disbursements  
for the year ending*

INCOME.

Interest on notes, mortgages, advances, &c., . . . . .	\$52,046.80	
Interest on Policies Mass. Hospital Life Insurance Co., . . . . .	849.00	
Interest on Bank Deposits.		
Deposit in New England Trust Co., . . . . .	\$68.03	
"    "    National Union Bank, . . . . .	3,794.02	
"    "    Old Boston National Bank, . . . . .	819.89	
"    "    Suffolk National Bank, . . . . .	100.68	4,282.62
Interest on Public Funds (after deducting \$2,900.52 for sinking premiums).		
United States 4's, . . . . .	\$18,265.08	
Massachusetts 3½'s, . . . . .	1,339.40	
City of Boston 3½'s, . . . . .	350.00	14,954.48
Interest on Sundry Bonds (after deducting \$3,425.58 for sinking premiums).		
American Bell Telephone Co. 4's, . . . . .	\$10,162.71	
"    Tel. and Tel. Co. 4's, . . . . .	8,000.00	
Walter Baker & Co. Ltd. 4½'s, . . . . .	10,800.00	
Broadway Realty Co. 5's, . . . . .	8,527.62	
Brookline Gas Light Co. 5's, . . . . .	250.00	
Chicago Edison Co. 5's, . . . . .	111.11	
Chicago Junc. Railways & Union Stock Yards Co. 5's, . . . . .	14,979.85	
Chicago Junc. Railways & Union Stock Yards Co. 4's, . . . . .	3,811.11	
Girard Point Storage Co. 3½'s, . . . . .	691.52	
Metropolitan Tel. & Tel. Co. 5's, . . . . .	7,500.00	
New England Tel. and Tel. Co. 6's, . . . . .	7,128.90	
"    "    "    5's, . . . . .	4,058.82	76,021.64
Interest on Railroad Bonds (after deducting \$7,806.21 for sinking premiums).		
Baltimore & Ohio 4's, . . . . .	\$4,000.00	
Baltimore & Ohio So. Western 3½'s, . . . . .	3,500.00	
Bangor & Aroostook 5's (Van Buren extension), . . . . .	4,767.50	
Burlington & Mo. River in Neb. 6's, . . . . .	20,177.95	
Central Vermont 4's, . . . . .	1,740.00	
Chicago, Burlington & Quincy 4's, . . . . .	120.00	
Chicago, Burlington & Quincy 3½'s, . . . . .	22,214.42	
Chicago & No. W., Madison Extension 7's, . . . . .	5,310.09	
Chicago, Rock Island & Pacific 4's, . . . . .	3,920.90	
Chicago Terminal Transfer 4's, . . . . .	4,000.00	
Eastern 6's, . . . . .	17,230.88	
Eastern sterling 6's, . . . . .	5,736.68	
Fort Scott, So. E. & Memphis 7's, . . . . .	5,390.00	
Indiana, Illinois & Iowa 4's, . . . . .	1,666.67	
Kansas & Missouri 5's, . . . . .	2,700.00	
Long Island 4's, . . . . .	9,875.00	
Amounts carried forward, . . . . .	\$112,350.09	\$154,154.54

*of the Treasurer of Harvard College,  
July 31, 1901.*

**EXPENSES.**

**Paid to account of Expenses in the**

**University, as per Table I (page 55).**

Salaries, . . . . .	\$39,953.99	
Retiring Allowances, . . . . .	9,527.62	
Sundry payments made from special Funds, .	7,463.60	
Other expenses, . . . . .	44,875.28	
Deficit in the School of Veterinary Medicine for 1900-01, . . . . .	8,456.45	
	<u>\$110,276.94</u>	
<b>Less repayment to William Hayes Fogg Fund, . . . . .</b>	<u>3,080.98</u>	<b>\$107,245.96</b>

**College, as per Table II (page 59).**

Salaries for instruction, . . . . .	\$366,234.99	
Sundry salaries, . . . . .	14,950.00	
Repairs, insurance, and cleaning on College Buildings, not valued in Treasurer's books,	49,637.66	
General expenses, . . . . .	49,096.65	
Fellowships, . . . . .	20,875.00	
Scholarships, . . . . .	45,947.72	
Exhibitions, . . . . .	22,575.94	
Prizes, . . . . .	2,186.74	
Botanic Garden and Botanic Museum, . . . .	10,011.32	
Gray Herbarium, . . . . .	7,763.23	
Hemenway Gymnasium, . . . . .	9,396.18	
Jefferson Physical Laboratory, . . . . .	2,802.03	
Appleton Chapel, . . . . .	8,659.71	
Summer Schools, . . . . .	17,644.18	
Books, from special Funds and gifts, . . . .	1,515.80	
Apparatus, &c., from special Funds and gifts, .	577.05	
Publication expenses, from special Funds and gifts, . . . . .	3,528.66	
Sundry payments from special Funds and gifts,	6,572.92	
Appropriations for collections and laboratories,	<u>37,097.10</u>	<b>676,572.88</b>

**Library, as per Table III (page 72).**

Salaries, . . . . .	\$15,220.83	
Services and wages, . . . . .	17,738.44	
Books, . . . . .	25,121.97	
Other expenses, . . . . .	9,566.62	<b>67,647.86</b>

**Divinity School, as per Table IV (page 75).**

Salaries for instruction, . . . . .	\$27,101.48	
Scholarships and Exhibitions, . . . . .	1,522.88	
Other expenses, . . . . .	8,868.85	<b>37,493.21</b>

**Amount carried forward, . . . . . \$888,959.91**

*General Statement of Receipts and Disbursements  
for the year ending*

INCOME (continued).

	Amounts brought forward, . . .	\$112,850.09	\$154,154.54
<b>Interest on Railroad Bonds (continued).</b>			
Massachusetts Electric Co's. 4½'s, . . . . .		2,250.00	
Metropolitan West Side Elevated 4's, . . . . .		8,000.00	
Minneapolis Union 5's, . . . . .		4,866.83	
New York Central & Hudson River 3½'s (L.S. & M.S. Coll.), . . . . .		6,974.85	
New York Central & H. R. 3½'s (M. C. Coll.), . . . . .		1,190.00	
New York, Ontario & Western 4's, . . . . .		7,884.18	
Rutland 6's, . . . . .		569.33	
Second Avenue 5's, . . . . .		3,941.67	
Third Avenue 4's, . . . . .		3,959.80	
Union Pacific 4's, . . . . .		18,000.00	169,986.70
<b>Dividends on Sundry Stocks.</b>			
American Surety Co., . . . . .		\$83.00	
First National Bank, . . . . .		156.00	
General Electric Co., . . . . .		18.00	
Illinois & Miss. Telegraph Co., . . . . .		25.00	
Improved Dwelling House Association, . . . . .		10.00	
Merchants National Bank, . . . . .		51.00	
Old Boston " " . . . . .		16.00	
Western Gas Co., . . . . .		48.00	
Western Union Telegraph Co., . . . . .		62.50	467.50
<b>Dividends on Manufacturing Stocks.</b>			
Amoskeag Manufacturing Co., . . . . .		\$1,200.00	
Merrimack " " . . . . .		561.00	
Pacific Mills, . . . . .		2,400.00	4,161.00
<b>Dividends on Railroad Stocks.</b>			
Boston & Albany, . . . . .		\$994.50	
Boston Elevated, . . . . .		144.00	
Boston & Lowell, . . . . .		3,080.00	
Boston & Maine, . . . . .		2,219.00	
Boston & Maine, preferred, . . . . .		273.00	
Chicago, Burlington & Quincy, . . . . .		12,748.50	
Fitchburg, preferred, . . . . .		1,185.00	
Manhattan, . . . . .		17.00	
New York Central & Hudson River, . . . . .		11,615.00	
New York, New Haven & Hartford, . . . . .		312.00	
Northern (N. H.), . . . . .		1,740.00	
Northern Pacific, preferred, . . . . .		15.00	
Old Colony, . . . . .		2,695.00	
Pennsylvania, . . . . .		6,000.00	
Rutland, preferred, . . . . .		3,200.00	
West End Street, preferred, . . . . .		238.00	46,476.00
Amount carried forward, . . . . .			\$375,245.74

of the Treasurer of Harvard College,  
July 31, 1901.

## EXPENSES (continued).

Amount brought forward, . . . . .		\$888,959.91	
<b>Law School, as per Table V (page 77).</b>			
Salaries for instruction, . . . . .	\$49,183.33		
Scholarships, . . . . .	3,100.00		
Other expenses, . . . . .	86,975.50	89,208.83	
<b>Medical School, as per Table VI (page 78).</b>			
Salaries for instruction, . . . . .	\$100,891.64		
Fees repaid to Instructors, . . . . .	5,760.00		
Fellowships, . . . . .	3,085.00		
Scholarships and Exhibitions, . . . . .	4,637.98		
Prizes and expenses, . . . . .	112.50		
Warren Anatomical Museum, . . . . .	387.62		
Books, from special Funds and gifts, . . . . .	1,848.06		
Sundry payments made from special Funds and gifts, . . . . .	3,473.65		
Laboratory appropriations, . . . . .	15,800.33		
Other expenses, . . . . .	32,517.34	168,014.02	
<b>Dental School, as per Table VII (page 82).</b>			
Salaries for instruction, . . . . .	\$12,605.00		
Other expenses, . . . . .	15,683.25	28,288.25	
<b>Museum of Comparative Zoölogy, as per Table VIII (page 83).</b>			
Paid from sundry Funds on the order of the Faculty, . . . . .	\$26,957.01		
Sturgis Hooper Fund, salary, . . . . .	5,415.36		
Scholarship, . . . . .	166.66		
Collection of Mammal skins, . . . . .	5,012.65	37,551.68	
<b>Peabody Museum of American Archae- ology and Ethnology, as per Table IX (page 84).</b>			
Peabody Professor Fund, Peabody Pro- fessor, . . . . .	\$2,320.93		
Fellowships and Scholarship, . . . . .	1,771.08		
Other expenses, . . . . .	6,302.52	10,394.48	
<b>Observatory, as per Table X (page 85).</b>			
Salaries, . . . . .	\$18,500.00		
Other expenses, . . . . .	39,070.07	52,570.07	
<b>Bussey Institution, as per table XI (page 86).</b>			
Salaries for instruction, . . . . .	\$6,950.00		
Other expenses, . . . . .	11,008.72	17,958.72	
<b>Arnold Arboretum, as per Table XII (page 87).</b>			
Salaries, . . . . .	\$3,500.00		
Other expenses, . . . . .	15,761.88	19,261.88	
Amount carried forward, . . . . .		\$1,312,187.79	

*General Statement of Receipts and Disbursements  
for the year ending*

INCOME (continued).

Amount brought forward, . . . . .	\$375,245.74		
<b>Dividends on Real Estate Trust Stocks.</b>			
Barristers Hall Trust, . . . . .	\$3,360.24		
Boston Real Estate Trust, . . . . .	675.00		
Essex Street Trust, . . . . .	3,000.00		
Paddock Building Trust, . . . . .	<u>4,693.63</u>		11,628.87
<b>Real Estate Investments, from rents, &amp;c., net receipts.</b>			
<b>Cambridge (University Houses and Lands).</b>			
Gross receipts, . . . . .	\$40,876.60		
Less Taxes, . . . . .	\$4,089.80		
Insurance, . . . . .	37.50		
Repairs, improvements, care, &c., . . . . .	<u>21,611.08</u>	25,788.83	<u>\$15,188.87</u>
<b>Boston (general investments).</b>			
Gross receipts, . . . . .	\$189,794.70		
Less Taxes, . . . . .	\$37,766.06		
Insurance, . . . . .	3,579.19		
Repairs, improvements, care, &c., . . . . .	<u>2,342.79</u>	43,688.06	<u>146,106.64</u>
<b>Bussey real estate.</b>			
Gross receipts, . . . . .	\$41,488.73		
Less Taxes, . . . . .	\$9,061.94		
Insurance, . . . . .	951.51		
Interest, . . . . .	1,489.28		
Repairs, improvements, care, &c., . . . . .	5,020.73		
Heat and power, . . . . .	<u>5,120.75</u>	21,644.21	<u>19,789.52</u>
<b>Sundry estates (special investments).</b>			
Gross receipts, . . . . .	\$6,044.01		
Less Taxes, . . . . .	\$1,253.66		
Repairs, . . . . .	467.56		
Insurance, . . . . .	260.04		
Advances repaid, . . . . .	<u>40.72</u>	2,021.98	<u>4,022.08</u>
185,056.46			
<b>Term Bills.</b>			
College, as per Table II, . . . . .	\$484,974.00		
Divinity School, as per Table IV, . . . . .	7,012.13		
Law School, as per Table V, . . . . .	95,525.00		
Medical School, as per Table VI, . . . . .	122,328.63		
Dental School, as per Table VII, . . . . .	20,000.45		
Bussey Institution, as per Table XI, . . . . .	2,610.00		
School of Veterinary Medicine, as per Table XIII, . . . . .	<u>2,665.82</u>		<u>785,116.08</u>
Amount carried forward, . . . . .			<u>\$1,307,047.10</u>



of the Treasurer of Harvard College,  
July 31, 1901.

**EXPENSES** (*continued*).

Amount brought forward, . . . . .		\$1,812,187.79	
<b>School of Veterinary Medicine, as per Table XIII (page 87).</b>			
Salaries for instruction, . . . . .	\$6,507.50		
Scholarships, . . . . .	290.00		
Other expenses, . . . . .	14,658.57		
	<u>\$21,451.07</u>		
Less deficit for 1900-01 assumed by the University,	8,456.45	12,994.62	
<b>Annuities from the following Funds.</b>			
Anonymous, . . . . .	\$300.00		
Bussey Trust, . . . . .	4,000.00		
Caroline Brewer Croft, . . . . .	2,048.05		
Gurney, . . . . .	1,000.00		
Professorship of Hygiene, . . . . .	2,000.00		
Alexander W. Thayer, . . . . .	480.00		
Charles Wilder, . . . . .	256.50	9,984.55	
<b>Class Funds.</b>			
Paid the Secretary of the Class of 1853, . . . . .		149.00	
<b>Sundry payments from income.</b>			
Gifts for Cuban Teachers, expenses, . . . . .	\$58,871.48		
“ the purchase of land in New Hampshire, . . . . .	6,850.00		
Harvard Memorial Society Fund, services, . . . . .	71.87		
John W. & Belinda L. Randall Fund, . . . . .	200.00		
Daniel Williams Fund, for the benefit of the Herring Pond and Masphee Indians, . . . . .	745.88		
Sarah Winslow Fund, to the Minister and Teacher at Tyngsborough, Mass., . . . . .	212.70	66,951.98	
<b>Construction Funds.</b>			
Architecture Building, . . . . .	\$109,175.71		
Brighton Marsh Fence, . . . . .	29,627.63		
New Boat House, . . . . .	25,414.61		
Pierce Hall, . . . . .	188,409.56		
Semitic Building, . . . . .	35,391.79		
John Simpkins Hall, . . . . .	11,739.34		
Stillman Infirmary, . . . . .	67,385.70		
University Museum, . . . . .	60,222.79	477,867.13	
<b>Total amount of expenses, carried forward, . . . . .</b>			<u>\$1,879,635.02</u>

*General Statement of Receipts and Disbursements  
for the year ending*

INCOME (continued).

	Amount brought forward, . . . . .	\$1,807,047.10
<b>Sundries.</b>		
<b>William Pennoyer Annuity, . . . . .</b>		<b>\$117.68</b>
<b>Asa Gray's copyrights, . . . . .</b>		<b>1,261.69</b>
<b>Matthews Scholarships (¼ net rents of Hall), . . . . .</b>		<b>5,399.88</b>
<b>Trustees of Edward Hopkins, . . . . .</b>		<b>191.28</b>
<b>Sale of grass, wood, old material, &amp;c., . . . . .</b>		<b>3,838.19</b>
<b>Sale of old examination papers, . . . . .</b>		<b>425.78.</b>
<b>Sale of tickets to Commencement Dinner, . . . . .</b>		<b>622.00</b>
<b>Sale of tickets to Divinity School Alumni Dinner, . . . . .</b>		<b>53.00</b>
<b>Sale of books, pamphlets, catalogues, &amp;c., . . . . .</b>		<b>4,155.82</b>
<b>Board of horses, cattle, &amp;c., at Bussey Institution, . . . . .</b>		<b>6,033.44</b>
<b>Repayment of advances for microscopes, . . . . .</b>		<b>1,707.80</b>
<b>Repayment of part of cost of publishing Observa- tory annals, . . . . .</b>		<b>2,140.26</b>
<b>Sundry repayments, . . . . .</b>		<b>803.55</b>
<b>Laboratory instruction to Dental students at Medi- cal School, . . . . .</b>		<b>4,100.00</b>
<b>Laboratory instruction to Medical and Veterinary students at Dental School, . . . . .</b>		<b>960.00</b>
<b>Subscriptions to Veterinary Hospital, . . . . .</b>		<b>20.00</b>
<b>Use of Library by resident graduates and others, . . . . .</b>		<b>70.00</b>
<b>Use of lockers in Hemenway Gymnasium, . . . . .</b>		<b>3,668.50</b>
<b>Use of Gymnasium by graduates, . . . . .</b>		<b>30.00</b>
<b>Use of Buildings (not Univ. Houses and Lands), . . . . .</b>		<b>5,160.00</b>
<b>Fees for admission and condition examinations, . . . . .</b>		<b>2,993.00</b>
<b>Fees in Infirmary, Dental School, . . . . .</b>		<b>5,881.89</b>
<b>Fees from Veterinary Hospital and Forge, . . . . .</b>		<b>10,167.10</b>
<b>Fees from Divinity Summer School, . . . . .</b>		<b>1,835.00</b>
<b>Laboratory fees, . . . . .</b>		<b>23,466.65</b>
<b>Fees for Summer Courses, . . . . .</b>	<b>\$18,146.35</b>	
<b>Other receipts from Summer Courses, . . . . .</b>	<b>400.00</b>	<b>18,546.35</b>
<b>Fees from Summer Camp, Engineering, . . . . .</b>		<b>1,035.60</b>
<b>Fees from Laboratory, Dental School, . . . . .</b>		<b>2,176.55</b>
<b>Fees for use of microscopes, Veterinary School, . . . . .</b>		<b>34.00</b>
<b>Fines, . . . . .</b>		<b>351.45</b>
<b>Trustee of C. L. Hancock real estate, . . . . .</b>		<b>848.81</b>
<b>Loans to student's repaid, . . . . .</b>		<b>1,578.54</b>
<b>Sundry Gifts for immediate use (see page 20), . . . . .</b>		<b>108,668.26</b>
		<b>129,497.77</b>
	<b>Total amount of income, . . . . .</b>	<b>\$1,545,213.13</b>

RECEIPTS EXCLUSIVE OF INCOME.

GIFTS FOR CAPITAL ACCOUNT.

<b>Edward Austin Fund (additional), . . . . .</b>	<b>\$25,000.00</b>
<b>Edward Austin Fund, Bact. Laboratory (additional), . . . . .</b>	<b>1,500.00</b>
<b>Amounts carried forward, . . . . .</b>	<b>\$26,500.00</b>
	<b>\$1,545,213.13</b>

*of the Treasurer of Harvard College,  
July 31, 1901.*

INVESTMENTS AND SUNDRY PAYMENTS.

Amount brought forward, . . . . . **\$1,879,685.09**

GENERAL INVESTMENTS.

\$100,000 Baltimore & Ohio R. R. Conv. Deb. 4's of 1911 (70% of principal and full premium),	\$70,750.00	
100,000 Indiana, Illinois & Iowa R. R. 1st M. 4's of 1950,	96,500.00	
100,000 Long Island Railway Co. Unified M. 4's of 1949,	96,257.50	
100,000 Massachusetts Electric Companies 4½% Gold Coupon Notes of 1906, . . . . .	98,000.00	
45,000 Broadway Realty Co. Purchase Money 1st M. 5's of 1926, . . . . .	50,625.00	
100,000 Chicago Edison Co. 1st M. 5's of 1926, . . . . .	107,260.00	
156 shares Chicago, Burlington & Quincy R. R., . . . . .	15,600.00	
667 " Pennsylvania R. R., . . . . .	40,025.04	
2,000 " Barristers Hall Trust (20%), . . . . .	40,000.00	
1,750 " " " (10%), . . . . .	17,500.00	
1,700 " " " " . . . . .	17,000.00	
1,313 shares Paddock Building Trust (10%), . . . . .	18,180.00	
Gerrish Block, 47 to 59 Blackstone St. and 72 to 76 North St., Boston, . . . . .	192,875.75	
Estate, Washington St., North, Boston, Improvements,	8,347.87	
Baring Bros. & Co. in account, . . . . .	\$196.52	
Less expenses, . . . . .	2.18	194.34
Accrued interest and expenses on bonds bought, . . . . .		4,122.22
Advances to Rotch Laboratory, . . . . .		6,687.62
" " Harvard Dining Association, . . . . .		21.16
" " Randall Hall Association, . . . . .		11,155.56
Notes of manufacturing companies, &c., . . . . .	\$780,000.00	
Less notes paid, . . . . .	710,000.00	70,000.00
		<b>956,002.06</b>

SPECIAL INVESTMENTS.

Estate No. 8 Divinity Avenue, Cambridge (University Houses and Lands Account), . . . . .	\$13,158.50	
Real Estate in Chelsea. Legal Expenses (C. L. Han- cock Fund), . . . . .		10.00
14 shares Chicago, Burlington & Quincy R. R. (Price Greenleaf Fund), . . . . .	1,400.00	
16 shares American Light & Traction Co., preferred, received in part payment for 16 shares Western Gas Co. exchanged (David Ames Weld Fund), . . . . .	1,520.00	
4½ shares American Light & Traction Co., received in part payment for 16 shares Western Gas Co. ex- changed (David Ames Weld Fund), . . . . .		80.00
100 shares Paddock Building Trust (10%) (Price Greenleaf Fund), . . . . .	1,000.00	17,168.50
Amount carried forward, . . . . .		<b>\$2,852,805.58</b>

*General Statement of Receipts and Disbursements  
for the year ending*

**RECEIPTS EXCLUSIVE OF INCOME (continued).**

Amounts brought forward, . . . . \$26,500.00 \$1,545,213.18

**GIFTS FOR CAPITAL ACCOUNT (continued).**

Arnold Arboretum Fund (additional), . . . . .	\$57,295.00	
Lucius F. Billings Fund, . . . . .	5,000.00	
Robert Charles Billings Fund (additional), . . . . .	7,500.00	
F. B. Greenough Fund for Surgical Research, . . . . .	1,000.00	
Phillips Brooks House Endowment, . . . . .	10,506.66	
Free Bed Fund of the Class of 1868 (additional), . . . . .	1,275.00	
Robert Henry Eddy Fund, . . . . .	45,000.00	
Calvin Ellis Fund (additional), . . . . .	48,488.39	
Calvin and Lucy Ellis Aid Fund (additional), . . . . .	53,401.47	
Lucy Ellis Fund (additional), . . . . .	10,000.00	
John Davis Williams French Fund, . . . . .	5,000.00	
Fund for the Advancement of Astronomical Science . . . . .	50,000.00	
Willard Peele Hunnewell Fund, . . . . .	5,000.00	
Free Bed Fund for the Stillman Infirmary, . . . . .	500.00	
Henry Lee Professorship Fund (additional), . . . . .	50,000.00	
Henry L. Pierce Residuary Bequest (additional), . . . . .	5,000.00	
Nelson Robinson Jr. Endowment Fund (additional), . . . . .	200,000.00	
Professorship of Hygiene Fund (additional), . . . . .	15,680.00	
Gurdon Saltonstall Fund, . . . . .	60,000.00	
Saltonstall Scholarship Fund (additional), . . . . .	6,000.00	
Leverett Saltonstall Scholarship Fund (additional), . . . . .	3,000.00	
George C. Shattuck Fund (additional), . . . . .	32,870.80	
Christopher M. Weld Scholarship Fund (additional), . . . . .	2,000.00	
Charles Wilder Professorship Fund (additional), . . . . .	25,000.00	
Henry P. Wolcott Fund, . . . . .	2,500.00	
David Ames Wells Fund, . . . . .	78,152.11	
Huntington Frothingham Wolcott Fund (additional), . . . . .	10,000.00	
J. Huntington Wolcott Fund (additional), . . . . .	10,000.00	826,669.48

**SALES, ETC., GENERAL INVESTMENTS.**

\$56,000 Walter Baker & Co. Limited 4½'s, called and paid off at par, . . . . .	\$56,000.00
85,000 Burl. & Mo. River (Neb.) R. R. non. ex. 6's, called and paid off at par, . . . . .	35,000.00
100,000 Eastern R. R. 1st M. 6's of 1906, . . . . .	114,250.00
14,000 Fort Scott, South Eastern & Memphis R. R. 1st M. 7's, called and paid off at 105, . . . . .	14,700.00
2 Rights Chicago, Burlington & Quincy R. R., . . . . .	8.15
250 shares Barristers Hall Trust (80% paid), . . . . .	22,000.00
50 " " " " (90% paid), . . . . .	4,850.00

Amounts carried forward, . . . . \$246,808.15 \$2,371,882.56

of the Treasurer of Harvard College,  
July 31, 1901.

INVESTMENTS AND SUNDRY PAYMENTS (*continued*).

Amount brought forward, . . . . . \$2,852,805.58

SPECIAL INVESTMENTS (*continued*).

Property received on account of the bequests of Miss  
Lucy Ellis.

\$2,000 Atchison, Topeka & Santa Fe Railway Gen. M. 4's of 1995, . . . . .	2,065.00	
2,000 Atchison, Topeka & Santa Fe Railway Adjust- ment 4's of 1995, . . . . .	1,805.00	
2,000 Chicago & Eastern Illinois R. R. Cons. M. 5's of 1937, . . . . .	2,346.25	
2,000 Central Vermont R'y 1st M. 4's of 1920, . .	1,804.78	
4,000 Little Rock & Fort Smith R'y 1st M. 7's of 1905, . . . . .	4,258.78	
3,000 Erie Telegraph & Telephone Co. Coll. Tr. 5's of 1926, . . . . .	3,094.59	
2,000 Somerset Trust 2d M. 6's of 1902, . . . . .	2,079.33	
1 share Central Vermont R'y, . . . . .	7.73	
41 shares Chicago, Burlington & Quincy R. R., .	5,862.18	
50 " Chicago, St. Paul, Minneapolis & Omaha R'y, preferred, . . . . .	8,991.50	
71 " Fitchburg R. R., preferred, . . . . .	10,027.20	
12 " Chicago Junction R'y's & Union Stock Yards Co., . . . . .	1,734.60	
5 " E. & T. Fairbanks & Co., . . . . .	1,498.00	
10 " Improved Dwelling House Association, . .	400.00	
11 " Massachusetts Cremation Society, . .		
Real Estate in the town of Eden, Bar Harbor, Me., about 9 acres, . . . . .	10,000.00	55,974.94

Property received on account of the bequest of David  
Ames Wells.

\$4,000 Adams Express Co. Deb. 4's of 1948, . . . . .	\$4,200.00
2,000 Buffalo City Gas Co. 1st M. 5's of 1947, . . . .	1,500.00
1,000 The Electric Corporation 7's of 1992, . . . . .	1,000.00
50 shares Cleveland & Pittsburg R. R., . . . . .	4,750.00
20 " Illinois Central R. R., . . . . .	2,800.00
17 " Manhattan R'y, . . . . .	2,159.00
15 " Northern Pacific R'y, preferred, . . . . .	1,455.00
21 " Pennsylvania R. R., . . . . .	1,556.00
40 " Pittsburg, Fort Wayne & Chicago R'y, . . . . .	7,600.00
20 " West Virginia Central & Pittsburg R'y, . . . . .	1,600.00
33 " Pullman Co., . . . . .	7,029.00
40 " Adams Express Co., . . . . .	6,560.00
25 " Illinois & Miss. Telegraph Co., . . . . .	875.00

Amounts carried forward, . . . . . \$43,084.00 \$2,908,780.52

*General Statement of Receipts and Disbursements  
for the year ending*

RECEIPTS EXCLUSIVE OF INCOME (continued).

Amounts brought forward, . . . \$246,808.15 \$2,371,832.56

SALES, ETC., GENERAL INVESTMENTS (continued).

585 shares Barristers Hall Trust (full paid), . . .	62,581.80	
687 " Paddock Building Trust (55% paid), . . .	41,205.76	
120 " " " " (65% paid), . . .	8,397.60	358,992.81

SALES, ETC., SPECIAL INVESTMENTS.

Sale of **Price Greenleaf Investments.**

317 rights Boston & Maine R. R., . . . . .	\$32.21	
7 " Chicago, Burlington & Quincy R. R., . .	29.65	
\$1,000 Burlington & Missouri River (Neb.) R. R. non ex. 6's, called and paid off at par, . . . . .	1,000.00	1,051.86

Sale of property received from the estate of **Henry C. Warren.**

84 shares Boston & Albany R. R., . . . . .	\$21,407.26	
64 " Boston Elevated R'y, . . . . .	9,948.38	
200 " West End St. R'y, preferred, . . . . .	22,715.86	
39 " First National Bank, . . . . .	6,814.22	60,885.22

Sale of property received from the estate of **Calvin Ellis.**

150 shares Boston & Albany R. R., . . . . .	\$38,225.72	
50 " Boston & Lowell R. R., . . . . .	12,142.75	
91 " Boston & Maine R. R., preferred, . . .	15,464.55	
156 " New York, New Haven & Hartford R.R.,	32,948.46	
120 " Old Colony R. R., . . . . .	24,215.68	
17 " Merchants National Bank, . . . . .	2,783.16	
8 " Old Boston National Bank, . . . . .	797.59	
200 rights Chicago, Burlington & Quincy R. R., .	815.00	127,387.91

Sale of property received from the estate of **Miss Lucy Ellis.**

\$2,000 Atchison, Topeka & Santa Fe R'y Gen. M. 4's of 1995, . . . . .	\$2,065.00	
2,000 Atchison, Topeka & Santa Fe R'y Adj. 4's of 1995, . . . . .	1,805.00	
2,000 Chicago & Eastern Illinois R. R. Cons. M. 5's of 1937, . . . . .	2,346.25	
2,000 Central Vermont R'y 1st M. 4's of 1920, . .	1,804.78	
4,000 Little Rock & F't Smith R'y 1st M. 7's of 1905,	4,258.78	
3,000 Erie Telegraph & Telephone Co., Coll. Tr. 5's of 1926, . . . . .	3,094.59	
2,000 Somerset Trust 2d M. 6's of 1902, . . . . .	2,079.33	
1 share Central Vermont R'y, . . . . .	7.73	
41 shares Chicago, Burlington & Quincy R. R., .	5,862.18	

Amounts carried forward, . . . . . \$38,323.64 \$2,920,200.36

of the Treasurer of Harvard College,  
July 31, 1901.

INVESTMENTS AND SUNDRY PAYMENTS (*continued*).

Amounts brought forward, . . . . . \$43,084.00 \$2,908,780.52

SPECIAL INVESTMENTS (*continued*).

Property received on account of the bequest of David Ames Wells ( <i>continued</i> ).		
25 shares	Northwestern Telegraph Co., . . . . .	1,525.00
50 "	Western Union Telegraph Co., . . . . .	4,650.00
10 "	The Electric Corporation, . . . . .	.40
8 "	General Electric Co., . . . . .	1,816.00
8 "	Buffalo City Gas Co., . . . . .	64.00
16 "	Western Gas Co., . . . . .	1,600.00
88 "	American Surety Co., . . . . .	7,677.50
10 "	Morton Trust Co., . . . . .	7,250.00
10 "	New York Security & Trust Co., . . . . .	8,000.00
11 "	Walter A. Wood M. & R. Machine Co., . . . . .	550.00
1 share	New York Evening Post Publishing Co., . . . . .	600.00
		76,816.90
Property received for the Fund for the Advancement of Astronomical Science.		
25 shares	Boston & Albany R. R., . . . . .	\$6,368.25
11 "	Boston & Maine R. R., . . . . .	2,131.03
17 "	Boston & Providence R. R., . . . . .	5,095.41
11 "	Connecticut River R. R., . . . . .	3,111.03
10 "	New York, New Haven & Hartford R.R., . . . . .	2,154.80
25 "	Norwich & Worcester R.R., . . . . .	5,743.25
30 "	Massachusetts Electric Companies, preferred, . . . . .	2,781.90
20 "	West End St. R'y, . . . . .	1,984.80
15 "	American Telephone & Telegraph Co., . . . . .	2,576.33
17 "	Calumet & Hecla Mining Co., . . . . .	18,421.40
		45,318.20
Property received for the Professorship of Hygiene Fund from its anonymous founder.		
80 shares	Chicago, Burlington & Quincy R. R., . . . . .	\$15,680.00
	Cost of transfer of same, . . . . .	1.85
		15,681.85
Property received for the George O. Shattuck Fund from an anonymous giver.		
25,000	Kansas City, Fort Scott & Memphis R. R. Cons. M. 6's of 1928, . . . . .	80,500.00
480	Beacon St., taxes and other expenses, . . . . .	510.66
	Woodland Hill Estate, taxes and legal expenses, . . . . .	1,080.11
		82,090.77
	Amount carried forward, . . . . .	\$3,078,682.24

*General Statement of Receipts and Disbursements  
for the year ending*

**RECEIPTS EXCLUSIVE OF INCOME** (*continued*).

Amounts brought forward, . . . . .	\$28,323.64	\$2,920,200.86	
<b>SALES, ETC., SPECIAL INVESTMENTS</b> ( <i>continued</i> ).			
Sale of property received from the estate of Miss Lucy Ellis ( <i>continued</i> ).			
50 shares Chicago, St. Paul, Minneapolis & Omaha R'y, preferred, . . . . .	8,991.50		
71 " Fitchburg R. R., preferred, . . . . .	10,027.20		
12 " Chicago Junction R'ys & Union Stock Yards Co., . . . . .	1,734.60		
5 " E. & T. Fairbanks & Co., . . . . .	1,498.00		
10 " Improved Dwelling House Association, . . . . .	400.00		
Estate 480 Beacon St., Boston, . . . . .	\$35,000.00		
Less Broker's commission and legal expenses, . . . . .	376.25	34,623.75	80,598.69
Sale of property received for the Fund for the Advancement of Astronomical Science.			
15 shares American Telephone & Telegraph Co., . . . . .	\$2,385.95		
15 rights American Telephone & Telegraph Co., . . . . .	240.88		
25 shares Boston & Albany R. R., . . . . .	6,368.25		
11 " Boston & Maine R. R., . . . . .	2,181.08		
17 " Boston & Providence R. R., . . . . .	5,095.41		
17 " Calumet & Hecla Mining Co., . . . . .	13,421.40		
10 " Connecticut River R. R., . . . . .	3,111.08		
25 " Norwich & Worcester R. R., . . . . .	5,743.25	38,446.70	
Part of note held for James Barr Ames Fund, paid, . . . . .			100.00
16 shares Western Gas Co. (David Ames Wells Fund) exchanged for			
16 shares American Light & Traction Co., pref., . . . . .	\$1,520.00		
4 $\frac{1}{2}$ shares American Light & Traction Co., . . . . .	80 00	1,600.00	
Sale of $\frac{1}{2}$ share American Light & Traction Co. (David Ames Wells Fund), . . . . .			20.00
<b>SUNDRIES.</b>			
Harvard Dining Association, to reduce debt, . . . . .	\$1,500.00		
Randall Hall Association, to reduce debt, . . . . .	600.00		
Premiums on Bonds, repaid in part, . . . . .	13,132.31		
Advances for accrued interest and expenses on bonds, repaid, . . . . .	4,547.23		
Advances to Calvin and Lucy Ellis real estate, repaid in part, . . . . .	40.73		
Special deposit, to be repaid, . . . . .	318.20		
Sundry repayments, . . . . .	2,030.84	22,169.39	
Amount carried forward, . . . . .		\$3,063,135.04	



*of the Treasurer of Harvard College,  
July 31, 1901.*

INVESTMENTS AND SUNDRY PAYMENTS (*continued*).

Amount brought forward, . . . . . \$8,078,688.24

Amount carried forward, . . . . . \$8,078,688.24

*General Statement of Receipts and Disbursements  
for the year ending*

**RECEIPTS EXCLUSIVE OF INCOME** (*continued*).

Amount brought forward, . . . . . **\$3,063,185.04**

**Bursar's Sundry Accounts.**

Receipts during the year, . . . . .	526,790.22
<b>Balance, August 1, 1900.</b>	
Cash in Suffolk National Bank, . . . . .	\$9,526.65
" National Union Bank, . . . . .	157,002.63
" Old Boston National Bank, . . . . .	69,748.60
" New England Trust Co., . . . . .	3,615.26
" hands of Charles F. Mason, Bursar, . . . . .	16,980.44
Term Bills due in October, 1900, . . . . .	229,150.09
" " overdue, . . . . .	8,828.89
	494,847.56
<b>Total, . . . . .</b>	<b>\$4,084,772.82</b>

*of the Treasurer of Harvard College,  
July 31, 1901.*

**INVESTMENTS AND SUNDRY PAYMENTS (continued).**

Amount brought forward, . . . . . **\$8,078,688.24**

**Bursar's Sundry Accounts.**

**Payments during the year.**

On account of Harvard Dining Association, . . .	\$185,959.25	
"    "    Randall Hall Association, . . .	78,378.75	
On sundry accounts, . . . . .	<u>251,634.90</u>	<b>515,972.90</b>

**Balance, July 31, 1901.**

Cash in Suffolk National Bank, . . . . .	\$26,480.66	
"    National Union Bank, . . . . .	185,570.67	
"    New England Trust Co., . . . . .	3,228.32	
"    hands of Charles F. Mason, Bursar, . . .	29,035.72	
Term Bills due in October, 1901, . . . . .	<u>236,731.08</u>	
"    "    overdue, . . . . .	9,065.28	<b>490,111.68</b>
<b>Total, . . . . .</b>		<b>\$4,084,772.82</b>

*The following Account exhibits the State of the Property, as entered upon the Treasurer's Books, July 31, 1901.*

Separate Investments, as stated in detail on pages 3, 4, 5 and 6 of this report, consisting of

Railroad Bonds, . . . . .	\$236,095.06	
Sundry Bonds, . . . . .	354,873.80	
Railroad Stocks, . . . . .	336,551.45	
Sundry Stocks, . . . . .	75,880.65	
University Houses and Lands, . . . . .	500,321.34	
Other Real Estate, . . . . .	499,641.08	
Sundries, . . . . .	28,469.44	
Cash in New England Trust Co., . . . . .	8,228.32	\$3,084,561.14

And "General Investments," as follows:—

Mortgages and Notes.

Mortgages, . . . . .	\$233,000.00	
Boott Cotton Mills' Note, . . . . .	100,000.00	
Cocheco Manufacturing Co.'s Notes, . . . . .	150,000.00	
Edison Electric Illuminating Co.'s Note, . . . . .	50,000.00	
Manchester Mills' Note, . . . . .	100,000.00	
Massachusetts Cotton Mills' Notes, . . . . .	100,000.00	
Merrimack Manufacturing Co.'s Notes, . . . . .	100,000.00	
Tremont & Suffolk Mills' Note, . . . . .	50,000.00	
Pacific Mills' Note, . . . . .	100,000.00	983,000.00

\*United States Bonds.

400,000 United States 4's of 1925, . . . . .	464,955.88
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Railroad Bonds.

\$100,000 Baltimore & Ohio 4's of 1948, . . . . .	\$96,625.00
100,000 Baltimore & Ohio Conv. Deb. 4's of 1911 (70% of principal and full premium paid), . . . . .	70,750.00
100,000 Baltimore & Ohio (S. W. Division) 1st M. 3½'s of 1925, . . . . .	89,750.00
100,000 Bangor & Aroostook (Van Buren Extension) 1st M. 5's of 1948, . . . . .	109,651.26
330,200 Burl. & Mo. R. in Nebr. non ex. 6's, . . . . .	338,715.19
644,000 Chic., Burl. & Quincy 3½'s of 1949, . . . . .	662,987.84
100,000 Chic. & No. W. (Madison Extension) 1st M. 7's of 1911, . . . . .	116,899.02
100,000 Chicago, Rock Island & Pacific 4's of 1988, . . . . .	106,842.08
100,000 Chicago Terminal Transfer 1st M. 4's of 1947, . . . . .	95,772.50

Amounts carried forward, . . . \$1,687,992.89 \$3,482,517.02

\* These \$400,000 of United States 4's of 1925 have, from Dec. 23, 1899, been lent to the National Shawmut Bank, which pays to the College, for the use, interest at the rate of two per cent. a year, in addition to the interest of four per cent. received by the bank from the bonds, thus making the income of the College from the bonds equal to six per cent. upon their par value.

Amounts brought forward, . . .		\$1,687,992.89	\$3,482,517.02
<b>Railroad Bonds (continued).</b>			
\$243,000 Eastern, 1st M. 6's of 1906, . . . . .	252,232.67		
£19,600 Eastern " " Sterling of 1906, . . . . .	95,483.40		
\$70,000 Fort Scott, So. E. & Mem., 1st M. 7's, . . . . .	69,608.69		
100,000 Indiana, Ill. & Iowa 1st M. 4's of 1950, . . . . .	96,500.00		
300,000 Long Island Unified M. 4's of 1949, . . . . .	283,257.50		
100,000 Massachusetts Electric Companies 4½% Gold Coupon Notes of 1906, . . . . .	98,000.00		
200,000 Metrop. West Side Elevated 4's of 1938, . . . . .	192,746.25		
100,000 Minneapolis Union 1st M. 5's of 1922, . . . . .	102,796.49		
200,000 New York Central & H. R. (L. S. & M. S. Coll.) 3½'s of 1938, . . . . .	202,489.55		
200,000 New York, Ontario & Western Ref. M. 4's of 1932, . . . . .	210,543.93		
100,000 Second Ave. (N. Y.) Con. M. 5's of 1948, . . . . .	118,552.78		
100,000 Third Avenue (N. Y.) 1st Consol. M. 4's of 2000, . . . . .	108,959.80		
400,000 Union Pacific 1st M. & L. G. 4's of 1947, . . . . .	353,114.75	3,867,228.70	

**Sundry Bonds.**

\$300,000 American Bell Tel. Co. 4's of 1908, . . . . .	\$208,558.32		
200,000 American Tel. & Tel. Co. 4's of 1929, . . . . .	196,000.00		
184,000 Walter Baker & Co. Ltd. 4½'s of 1908, . . . . .	184,000.00		
145,000 Broadway Realty Co. Purchase money 1st M. 5's of 1926, . . . . .	157,335.52		
100,000 Chicago Edison Co. 1st M. 5's of 1926, . . . . .	107,260.00		
250,000 Chicago Junction Railways and Union Stock Yards Coll. Trust 5's of 1915, . . . . .	250,282.05		
100,000 Chicago Junction Railways and Union Stock Yards 4's of 1940, . . . . .	98,500.00		
100,000 Metrop. Tel. & Tel. Co. 1st M. 5's of 1918, . . . . .	99,500.00		
100,000 New England Tel. & Tel. Co. 6's of 1906, . . . . .	101,484.36		
100,000 New England Tel. & Tel. Co. 5's of 1916, . . . . .	114,117.64	1,512,087.89	

**Railroad Stocks.**

1718 shares Chicago, Burl. & Quincy R. R., . . . . .	\$164,910.92		
2308 " N. Y. Central & Hud. River R. R., . . . . .	234,987.50		
2667 " Pennsylvania R. R., . . . . .	169,100.04	568,998.46	

**Manufacturing Stocks.**

12 shares Amoskeag Manufacturing Co., . . . . .	\$8,654.00		
187 " Merrimack " " . . . . .	18,700.00		
24 " Pacific Mills, . . . . .	16,668.29	39,022.29	

**Real Estate Trust Stocks.**

1000 shares Essex Street Trust, . . . . .	\$100,000.00		
1115 " Barristers Hall Trust, . . . . .	105,068.70		
1198 " Paddock Building Trust (65% paid), . . . . .	73,526.64	278,595.34	
Amount carried forward, . . . . .		\$9,748,899.70	

	Amount brought forward, . . . . .	\$9,748,899.70	
<b>Real Estate.</b>			
	Adams Estate, Washington Street, Boston, . . .	\$250,000.00	
	Amory Estate, Franklin Street, Boston, . . . .	165,615.81	
	Estate in Washington Street, North, Boston, . .	58,913.52	
	Gerrish Block, Blackstone and North Streets, Boston, . . . . .	192,875.75	
	Gray Estate, Washington Street, Boston, . . . .	834,231.77	
	Hayward Estate, Washington Street, Boston, . .	578,361.88	
	Lowell Estate, Washington Street, Boston, . . .	464,368.91	
	Townsend Estate, Hawkins Street, Boston, . . .	44,569.49	
	Webb Estate, Washington Street, Boston, . . . .	164,604.79	
	Reversion of Buildings in Brattle Street, Boston,	1,015.00	2,754,556.92
<b>Sundries.</b>			
	Advances to <b>Bussey</b> Trust, . . . . .	\$29,785.51	
	“ “ School of Veterinary Medicine, . .	24,406.01	
	“ “ <b>Peabody</b> Museum of American Archaeology and Ethnology, . .	1,607.30	
	“ “ Botanic Department, . . . . .	18,625.67	
	“ “ Dining Hall Association, . . . . .	12,522.66	
	“ “ <b>Randall</b> Hall Association, . . . . .	33,431.27	
	“ “ <b>Rotch</b> Laboratory, . . . . .	6,637.62	
		\$127,016.04	
	Baring Brothers & Co., . . . . .	2,682.59	
	Term bills due in October, 1901, . . . . .	236,731.08	
	“ “ overdue, . . . . .	9,065.28	375,494.94
<b>Cash in Suffolk National Bank, . . . . .</b>			
	“ “ National Union Bank, . . . . .	185,570.67	
	“ “ hands of Charles F. Mason, Bursar, . . .	29,085.72	241,087.05
	<b>Total, . . . . .</b>		<b>\$18,119,538.61</b>

*The foregoing Property represents the following Funds and Balances,\* and is answerable for the same.*

Principal, Aug. 1, 1900.	UNIVERSITY FUNDS.	Principal, July 31, 1901.
\$4,950.00	<b>Andrew Bigelow</b> (1898), . . . .	\$4,950.00
85,000.00	<b>Robert C. Billings</b> (1900), . . . .	92,500.00
5,000.00	<b>Stanton Blake</b> (1899), . . . . .	5,000.00
4,771.88	<b>Charlotte F. Blanchard</b> (1891), .	4,771.88
5,250.00	<b>Samuel D. Bradford</b> (1866), . .	5,250.00
12,500.00	<b>John W. Carter</b> (1898), . . . .	12,500.00
154.54	<b>Thomas Cotton</b> (1727), . . . . .	154.76
22,000.00	<b>John Cowdin</b> (1888), . . . . .	22,000.00
115,966.56	<b>George B. Dorr</b> (1882), . . . . .	115,966.56
48,458.50	<b>George Draper</b> (1892), . . . . .	48,458.50
	<b>R. H. Eddy</b> (1901), . . . . .	45,000.00
101,225.49	<b>Harvard Ellis</b> (1895), . . . . .	101,225.49
	<b>John Davis Williams French</b> (1901),	5,078.85
20,571.18	<b>Gore</b> (1834), . . . . .	20,571.18
25,000.00	<b>John C. Gray</b> (1881), . . . . .	25,000.00
20,000.00	<b>Walter Hastings</b> (1888), . . . .	20,000.00
5,000.00	<b>George Baxter Hyde</b> (1895), . .	5,000.00
129,940.89	<b>Insurance and Guaranty</b> (1860), . . .	132,288.30
16,871.68	<b>Leonard Jarvis</b> (1859), . . . . .	16,871.68
10,000.00	<b>Henry P. Kidder</b> (1894), . . . .	10,000.00
10,000.00	<b>Joseph Lee</b> (1802), . . . . .	10,000.00
10,000.00	<b>Theodore Lyman</b> (1898), . . . .	10,000.00
81,950.54	<b>Henry T. Morgan</b> (1883), . . . .	81,950.54
15,750.00	<b>Israel Munson</b> (1844), . . . . .	15,750.00
118,817.44	<b>Francis E. Parker</b> (1886), . . . .	118,817.44
30,000.00	<b>William Perkins</b> (1888), . . . .	30,000.00
51,686.17	<b>Henry L. Pierce</b> (1898), . . . .	51,000.71
570,000.00	<b>Henry L. Pierce (Residuary)</b> (1898),	
	Total received, . . . . \$750,000.00	
	Appropriated for build- ing Pierce Hall, . . . . .	202,100.00
63,515.48	<b>President's</b> (1883), . . . . .	63,603.76
354,056.53	<b>Retiring Allowance</b> (1879), . . . .	361,169.59
23,370.03	<b>John L. Russell</b> (1889), . . . . .	23,370.03
46,913.13	<b>Isaac Sweetser</b> (1894), . . . . .	46,913.13
5,000.00	<b>Seth Turner</b> (1883), . . . . .	5,000.00
100,000.00	<b>William F. Weld</b> (1893), . . . .	100,000.00
<u>\$2,108,718.94</u>	. . . Amounts carried forward, . . . . .	<u>\$2,153,061.30</u>

\* The Funds and Balances have been re-classified and the dates of the establishment of the Funds have been printed after their titles.

Principal,  
Aug. 1, 1900.

Principal, July 31, 1901.

<b>\$2,108,718.94</b>	. . Amounts brought forward, . . . . .	<b>\$2,158,061.80</b>
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## \*COLLEGE FUNDS.

8,151.81	John W. P. Abbot (1874), . . .	\$8,584.95
27,748.64	Alford Professorship (1765), . . .	27,748.64
6,230.00	Daniel Austin (1879), . . . . .	6,230.00
1,050.00	John A. Blanchard (1878), . .	1,050.00
39,780.00	Botanic Department (1867), . . . . .	39,780.00
28,337.40	Boylston Professorship (1772), . .	28,337.40
11,074.65	Francis James Child Mem. (1897),	11,161.27
6,584.16	Classical Publ. F'd of Class of 1856, (1888), . . . . .	6,026.18
150,297.54	Class Subscription (1870), . . . . .	150,297.54
3,235.78	Paul Dudley (1751), . . . . .	3,340.23
21,619.50	Eliot Professorship (1814), . . . . .	21,619.50
10,000.00	Eliot " (Jon. Phillips' gift) (1854), . . . . .	10,000.00
3,500.01	Erving Professorship (1791), . . .	3,500.01
35,990.99	Fisher " (1834), . . . . .	35,990.99
859.10	Henry Flynt (1760), . . . . .	875.97
16,240.38	Fund for Permanent Tutors (1796), .	16,240.38
1,033.57	Fund for Religious Services (1837), .	1,033.57
6,034.41	Gospel Church (1868), . . . . .	6,176.21
	Gray Herbarium (balance), . . . . .	845.37
32,511.00	Asa Gray Memorial (1898), . . . . .	32,511.00
21,569.43	Asa Gray Professorship of Systematic Botany (1897), . . . . .	21,599.46
194,561.54	Gurney (1868), . . . . .	194,455.95
15,000.00	Harvard Oriental Series (1899), . .	15,113.53
20,655.91	Herbarium (1865), . . . . .	20,655.91
20,217.08	Hersey Professorship (1772), . . . . .	20,217.08
21,744.18	Hersey Professorship (Thomas Lee's gift) (1856), . . . . .	21,744.18
34,517.60	Hollis Professorship of Divinity (1726),	34,517.60
3,747.33	Hollis " of Mathematics (1713),	3,747.33
5,386.20	Ingersoll Lecture (1894), . . . . .	5,453.37
1,846.08	Jefferson Physical Lab'y (balance),	3,155.81
9,464.01	Lectures on Political Economy (1889),	9,608.82
15,796.97	Lee Fund for Reading (1863), . . .	15,796.97
50,617.47	Henry Lee Professorship (1900), .	104,416.29
8,330.37	Joseph Lovering (1891), . . . . .	8,043.01
66,382.31	Lowell Fund for a Botanic Garden (1882), (formerly Professorship of Natural History, 1805), . . . . .	66,382.31
43,062.93	McLean Professorship (1834), . .	43,062.93
20,834.37	William B. Noble Lectures (1898),	21,232.69
<b>\$3,072,281.66</b>	. . Amounts carried forward, . . . . .	<b>\$1,019,502.39 \$2,158,061.80</b>

\* Including some actually used in the Graduate School.



<u>Principal, Aug. 1, 1900.</u>		<u>Principal, July 31, 1901.</u>
\$3,072,281.66	. . . Amounts brought forward, . . .	\$1,019,502.39 \$2,153,061.80
13,990.66	Daniel H. Peirce (1876), . . . .	13,996.14
21,000.00	Perkins Professorship (1841), . .	21,000.00
31,500.00	Jonathan Phillips (1861), . . . .	31,500.00
75,000.00	Physical Laboratory Endowm't(1881),	75,000.00
25,020.19	Plummer Professorship(1854), . .	25,020.19
52,500.00	Pope " (1868), . .	52,500.00
164,731.35	Professorship of Hygiene (1899), . .	165,118.71
100,000.00	Nelson Robinson, Jr. (1899), .	300,000.00
56,441.25	Rumford Professorship (1819), . .	56,441.25
2,000.00	John L. Russell (1889), . . . .	2,000.00
	Gurdon Saltonstall (1901), . .	60,000.00
4,336.65	George William Sawin (1890),	4,353.73
1,925.66	Schol. & Benef. money returned (bal.),	1,418.92
23,139.83	Smith Professorship (1816), . . .	23,139.83
12,811.14	Josiah Stickney (1899), . . . .	12,811.14
16,107.30	John E. Thayer (1885), . . . .	16,308.12
1,177.02	Elizabeth Torrey (1896), . . . .	1,232.34
10,000.00	Henry Warren Torrey (1890), .	10,697.53
101,385.25	Unknown Memorial (1898), . . .	101,793.41
16,031.33	Samuel Ward (1880), . . . .	16,784.74
6,222.24	Cyrus M. Warren (1893), . . . .	6,487.75
113,978.61	Henry C. Warren (1899), . . . .	117,873.44
50,000.00	Increase S. Wheeler (1889), . . .	50,000.00
976.93	Chauncey Wright (1884), . . . .	994.63
	Gifts for land in New Hampshire (bal.),	3,408.15
523.25	" Classical Library (balance),	448.06
159.72	" Historical " "	
	" Sugar-cane investigation, etc.	
	(balance), . . . . .	1,545.93
2,490.46	" cases, etc., at Botanic Gar-	
	den (balance), . . . . .	1,989.86
3,663.20	" Sanskrit Department (bal.),	2,571.18
19,185.27	" Semitic Collection (balance),	20,048.42
1,587.87	" " Library, "	1,531.11
2,659.48	" Collections for a Germanic	
	Museum (balance), . . . .	3,241.62
20,116.88	" Books, Prints, Casts, etc.,	
	for Dept. of Architec. (bal.),	13,376.39
250.00	" Physical Research "	76.15
100.00	" Music 7 "	12.20
950.00	" Salaries "	5,329.36
1,668.51	Sundry Gifts (unexpended balances),	1,734.49
FELLOWSHIP FUNDS.		
10,580.41	Ozias Goodwin Memorial (1889),	11,077.67
10,809.52	Harris (1868), . . . . .	10,817.59
10,808.97	John Thornton Kirkland (1871),	10,641.99
4,058,050.61	. . . Amounts carried forward, . . .	\$2,298,819.38 \$2,153,061.80

Principal, Aug. 1, 1900.		Principal, July 31, 1901.
\$4,058,050.61	. . . Amounts brought forward, . . .	\$2,298,819.38 \$2,153,061.80
11,357.59	Henry Lee Memorial (1889), . .	11,441.42
	Charles Eliot Norton (balance),	300.00
12,228.79	Robert Treat Paine (1887), . .	12,553.55
55,298.40	John Parker (1873), . . . . .	55,447.41
32,525.28	Rogers (1869), . . . . .	31,878.96
11,004.74	Henry Bromfield Rogers Memo- rial (1889), . . . . .	11,296.98
400.00	South End House (balance), . . . .	400.00
11,341.07	John Tyndall (1885), . . . . .	11,624.10
11,322.81	James Walker (1881), . . . . .	11,354.99
21,744.60	Whiting (1896), . . . . .	22,466.61

## SCHOLARSHIP FUNDS.

3,627.32	Abbot (1852), . . . . .	3,697.79
1,722.84	Alford (1785), . . . . .	1,803.27
5,443.00	Bartlett (1881), . . . . .	5,448.82
5,655.62	Bassett (1876), . . . . .	5,699.45
12,824.02	Bigelow (1865), . . . . .	12,843.41
2,004.92	Borden (1896), . . . . .	2,099.16
111,943.37	Bowditch (1864), . . . . .	112,621.37
2,056.00	Bright (balance), . . . . .	2,164.34
3,727.57	Browne (1887), . . . . .	3,752.79
5,078.78	Morey Willard Buckminster (1898), . . . . .	5,117.49
32,175.30	Burr (1895), . . . . .	32,420.86
6,080.50	Ruluff S. Choate (1884), . . . .	6,091.26
8,037.05	Class of 1802 (1870), . . . . .	8,214.79
3,114.74	“ 1814 (1853), . . . . .	3,136.14
6,427.87	“ 1815 (Kirkland) (1852),	6,413.33
4,386.49	“ 1817 (1852), . . . . .	4,442.63
3,494.89	“ 1828 (1882), . . . . .	3,459.15
4,753.08	“ 1835 (1853), . . . . .	4,801.47
4,058.29	“ 1841 (1871), . . . . .	4,049.02
4,987.63	“ 1852 (Dana) (1876), . .	5,088.78
15,254.67	“ 1856 (1885), . . . . .	15,371.66
4,582.51	“ 1867 (1886), . . . . .	4,622.91
5,000.00	“ 1883 (1900), . . . . .	5,250.00
11,634.55	Crowninshield (1877), . . . . .	11,739.73
600.00	W. H. Cudworth (balance), . .	600.00
5,317.78	Francis H. Cummings (1898), .	5,367.73
5,507.20	Geo. and Martha Derby (1881),	5,516.08
4,901.36	Julius Dexter (1892), . . . . .	4,965.05
2,698.95	O. W. Doe (1893), . . . . .	2,725.80
5,540.90	W. S. Eliot (1875), . . . . .	5,467.99
39,579.30	Joseph Eveleth (1896), . . . .	39,906.19
2,100.06	Fall River (1893), . . . . .	2,105.42
6,210.72	Farrar (1878), . . . . .	6,169.30
\$4,565,800.67	. . . Amounts carried forward, . . .	\$2,310,756.48 \$2,153,061.80

<u>Principal, Aug. 1, 1900.</u>		<u>Principal, July 31, 1901.</u>
\$4,565,800.67	. . . Amounts brought forward, . . .	\$2,810,756.48 \$2,153,061.30
11,074.02	<b>Richard Augustine Gambrill</b> (1890), . . . . .	11,169.50
7,013.51	<b>Charles Haven Goodwin</b> (1889),	7,043.17
4,100.17	<b>Greene</b> (1863), . . . . .	4,142.87
200.00	<b>Price Greenleaf</b> (balance), . . .	200.00
23,100.77	<b>William Hilton</b> (1897), . . . . .	23,211.52
10,395.96	<b>Ebenezer Rockwood Hoar</b> (1895),	10,484.57
6,161.23	<b>Levina Hoar</b> (1876), . . . . .	6,200.84
13,093.05	<b>Hodges</b> (1878), . . . . .	13,508.42
6,084.81	<b>Hollis</b> (1732), . . . . .	6,092.91
10,637.02	<b>Henry B. Humphrey</b> (1890), . .	10,686.96
10,155.31	<b>G. E. Lowell</b> (1886), . . . . .	10,232.59
3,776.95	<b>Matthews</b> (balance), . . . . .	3,777.78
5,883.24	<b>Merrick</b> (1888), . . . . .	6,026.40
8,084.52	<b>Morey</b> (1868), . . . . .	8,164.51
5,596.04	<b>Lady Mowison</b> (1643), . . . . .	5,659.05
5,481.86	<b>Howard Gardner Nichols</b> (1897),	5,487.16
4,786.89	<b>Lucy Osgood</b> (1873), . . . . .	5,011.88
6,274.56	<b>Pennoyer</b> (1670), . . . . .	6,378.20
4,157.36	<b>Perkins</b> (1869), . . . . .	4,202.76
1,451.44	<b>Wendell Phillips Mem'l</b> (1895),	1,486.30
350.00	<b>Ricardo Prize</b> (balance), . . . . .	350.00
1,378.10	<b>Rodger</b> (1863), . . . . .	1,292.37
3,398.21	<b>Henry B. Rogers</b> (1859), . . . .	3,457.92
5,516.98	<b>Edward Russell</b> (1877), . . . . .	5,576.28
5,430.39	<b>Sales</b> (1893), . . . . .	5,418.82
4,580.87	<b>Saltonstall</b> (1739), . . . . .	10,732.37
5,115.58	<b>Leverett Saltonstall</b> (1895), . .	8,275.57
6,867.57	<b>Mary Saltonstall</b> (1730), . . . .	6,890.37
3,280.29	<b>Sever</b> (1868), . . . . .	3,234.45
10,594.62	<b>Sewall</b> (1696), . . . . .	10,692.58
48,197.37	<b>Shattuck</b> (1854), . . . . .	48,462.63
5,930.56	<b>Slade</b> (1877), . . . . .	5,959.32
4,374.77	<b>Story</b> (1864), . . . . .	4,380.39
2,435.09	<b>Stoughton</b> (1701), . . . . .	2,663.72
2,084.94	<b>Swift</b> (1899), . . . . .	2,182.93
76,350.73	<b>Thayer</b> (1857), . . . . .	77,139.23
4,119.58	<b>Gorham Thomas</b> (1865), . . . . .	4,118.22
7,377.57	<b>Toppan</b> (1868), . . . . .	7,524.34
24,911.71	<b>Townsend</b> (1861), . . . . .	25,082.57
4,497.44	<b>Walcott</b> (1855), . . . . .	4,575.46
8,160.80	<b>Christopher M. Weld</b> (1899), . .	10,330.52
5,177.96	<b>Jacob Wendell</b> (1899), . . . . .	5,221.32
11,162.95	<b>Whiting</b> (1874), . . . . .	11,287.61
\$4,964,452.43	. . . Amounts carried forward, . . .	\$3,224,768.36 \$2,153,061.30

<u>Principal,</u> <u>Aug. 1, 1900.</u>		<u>Principal, July 31, 1901.</u>
\$4,964,452.43	. . . Amounts brought forward, . . .	\$3,224,768.86 \$3,153,061.80

## BENEFICIARY FUNDS.

478.26	Nathaniel Appleton (1772), . .	500.78
1,625.20	Frank Bolles Memorial (1894), .	1,652.58
1,311.63	William Brattle (1717), . . . .	1,373.29
854.04	Thomas Danforth (1724), . . . .	894.18
5,448.73	Moses Day (1880), . . . . .	5,448.73
341.58	John Ellery (1738), . . . . .	357.65
1,333.34	Exhibitions (1796), . . . . .	1,333.34
640.56	Thomas Fitch (1737), . . . . .	670.69
368.22	Ephraim Flynt (1723), . . . . .	385.52
128.05	Henry Flynt (1760), . . . . .	134.07
382.81	Henry Gibbs (1722), . . . . .	400.81
2,535.92	John Glover (1653), . . . . .	2,655.11
6,220.52	Price Greenleaf Aid (balance), .	7,585.48
307.44	Edward Holyoke (1748), . . . .	321.87
2,034.13	Robert Keyne (1659), . . . . .	2,124.13
889.62	Mary Lindall (1812), . . . . .	879.10
4,976.59	Susan B. Lyman (1899), . . . .	5,210.51
179.85	Anne Mills (1725), . . . . .	187.76
10,812.36	Munroe (1880), . . . . .	10,812.36
1,979.49	Palfrey Exhibition (1821), . . . .	1,992.50
4,270.89	Dr. A. P. Peabody Memorial (1896),	4,331.63
170.79	Joseph Sewall (1765), . . . . .	178.83
13,973.22	Alexander W. Thayer (1899), . .	14,149.95
11,155.10	Quincy Tufts (1877), . . . . .	11,155.10
280.60	Benjamin Wadsworth (1737), . .	241.46

## PRIZE FUNDS.

1,338.21	James Gordon Bennett (1893), .	1,361.10
14,662.06	Bowdoin Prizes for Dissertations, (1791), . . . . .	14,451.17
3,694.54	Boylston Prizes for Elocution (1817),	3,613.20
5,108.03	Coolidge Debating (1899), . . . .	5,148.11
100.00	Dante (balance), . . . . .	100.00
1,697.85	Edward Hopkins Gift for "De- turs" (1718) (balance), . . . . .	1,796.65
1,055.38	Sales (1892), . . . . .	1,059.96
2,485.71	John O. Sargent (1839), . . . . .	2,502.55
7,101.11	George B. Schier (1890), . . . . .	7,074.47
3,037.72	Charles Sumner (1874), . . . . .	3,180.51
3,494.30	Robert N. Toppan (1894), . . . .	3,508.52
2,068.40	Philip Washburn (1899), . . . .	2,090.60
	David A. Wells (1901), . . . . .	78,426.46 3,424,059.04
<u>\$5,062,893.68</u>	. . . Amounts carried forward, . . . . .	<u>\$5,577,120.34</u>

<u>Principal, Aug 1, 1900.</u>	<u>Principal, July 31, 1901.</u>
\$5,082,898.68 . . . Amounts brought forward, . . . . .	\$5,577,120.84

## LIBRARY FUNDS.

2,159.29	<b>Bowditch</b> (1861), . . . . .	\$2,122.62	
123.51	<b>Bright</b> (balance), . . . . .	195.93	
532.99	<b>Fund of the Class of 1851</b> (1899), . . . . .	558.04	
524.82	“ “ “ <b>1851 (C. F.</b> <b>Dunbar's Gift)</b> (1899), . . . . .	549.49	
27,788.06	<b>Edwin Conant</b> (1892), . . . . .	27,788.45	
25,951.35	<b>Constantius</b> (1886), . . . . .	25,978.28	
5,347.88	<b>Denny</b> (1875), . . . . .	5,308.72	
5,310.70	<b>Farrar</b> (1871), . . . . .	5,309.08	
3,161.63	<b>Haven</b> (1844), . . . . .	3,195.34	
10,098.62	<b>Hayes</b> (1885), . . . . .	10,079.59	
5,274.99	<b>Hayward</b> (1864), . . . . .	5,298.67	
2,371.50	<b>Hollis</b> (1781), . . . . .	2,373.12	
2,153.47	<b>Homer</b> (1871), . . . . .	2,147.96	
500.00	<b>Jarvis</b> (1885), . . . . .	500.00	
5,332.42	<b>Lane</b> (1863), . . . . .	5,320.27	
25,574.78	<b>Lowell</b> (1881), . . . . .	26,084.62	
60,376.55	<b>Minot</b> (1870), . . . . .	60,724.96	
7,196.02	<b>Lucy Osgood</b> (1873), . . . . .	7,180.76	
7,071.75	<b>Mary Osgood</b> (1860), . . . . .	7,040.22	
3,951.19	<b>Sales</b> (1892), . . . . .	3,942.08	
5,381.04	<b>Salisbury</b> (1858), . . . . .	5,307.75	
20,090.31	<b>Sever</b> (1878), . . . . .	20,138.58	
4,012.04	<b>Shapleigh</b> (1801), . . . . .	4,000.48	
10,614.72	Subscription for <b>Library</b> (1859), . . . . .	10,582.12	
37,568.47	<b>Sumner</b> (1875), . . . . .	37,621.50	
5,067.93	<b>Kenneth Matheson Taylor</b> (1899), . . . . .	5,113.14	
11,925.34	<b>Daniel Treadwell</b> (1885), . . . . .	11,925.34	
5,223.02	<b>Ichabod Tucker</b> (1875), . . . . .	5,268.09	
15,868.93	<b>Walker</b> (1875), . . . . .	15,901.02	
5,337.73	<b>Ward</b> (1858), . . . . .	5,299.60	
270.03	<b>Waterston Gift</b> (balance), . . . . .	286.41	
10,127.65	<b>J. Huntington Wolcott</b> (1891), . . . . .	20,122.29	
100,000.00	<b>Eben Wright</b> (1883), . . . . .	100,000.00	
64.04	<b>J. Randolph Coolidge Gift</b> (bal.), . . . . .		
667.82	<b>Sundry Gifts</b> (unexpended bals.), . . . . .	1,735.43	\$444,894.90

## DIVINITY SCHOOL FUNDS.

27,995.74	Divinity School (balance), . . . . .	\$28,219.07	
71,427.02	<b>New Endowment</b> (1879), . . . . .	71,427.02	
17,000.00	<b>Oliver Ames</b> (1880), . . . . .	17,000.00	
525.00	<b>Hannah C. Andrews</b> (1836), . . . . .	525.00	
890.00	<b>Daniel Austin</b> (1880), . . . . .	890.00	
1,000.00	<b>Adams Ayer</b> (1869), . . . . .	1,000.00	
\$5,635,242.03 . . . Amounts carried forward, . . . . .		\$119,061.09	\$6,022,015.24

<u>Principal, Aug. 1, 1900.</u>		<u>Principal, July 31, 1901.</u>
<b>\$5,635.242.08</b>	. . . Amounts brought forward, . . .	<b>\$119,061.09 \$6,022,015.24</b>
7,875.00	Joseph Baker (1876), . . . . .	7,875.00
4,517.79	Beneficiary money returned (balance),	4,730.14
3,526.34	Rushton Dashwood Burr (1894),	3,692.06
37,583.74	Bussey Professorship (1863), . . .	37,583.74
2,177.95	Joshua Clapp (1836), . . . . .	2,177.95
5,000.00	Edwin Conant (1892), . . . . .	5,000.00
20,280.38	Dexter Lectureship (1810), . . . .	20,280.38
44,210.77	Frothingham Professorship (1892),	46,288.69
1,050.00	Abraham W. Fuller (1847), . . . .	1,050.00
911.34	Lewis Gould (1852), . . . . .	911.34
658.16	Louisa J. Hall (1893), . . . . .	658.66
6,008.43	Hancock Professorship (1765), . . .	6,008.43
76,885.81	Charles L. Hancock (1891), . . . .	76,885.81
5,000.00	Haven (1898), . . . . .	5,000.00
1,050.00	Samuel Hoar (1857), . . . . .	1,050.00
10,000.00	Henry P. Kidder (1881), . . . . .	10,000.00
9,184.69	Henry Lienow (1841), . . . . .	9,184.69
1,050.00	Caroline Merriam (1867), . . . . .	1,050.00
16,015.81	Parkman Professorship (1814), . . .	16,015.81
440.14	John W. Quinby (1888), . . . . .	460.82
1,000.00	Abby Crocker Richmond (1881), . . .	1,000.00
1,000.00	John L. Russell (1890), . . . . .	1,000.00
10,000.00	William B. Spooner (1890), . . . . .	10,000.00
40,000.00	Thomas Tileston of New York Endowment (1879), . . . . .	40,000.00
5,250.00	Mary P. Townsend (1861), . . . . .	5,250.00
2,100.00	Winthrop Ward (1862), . . . . .	2,100.00
53,845.73	Winn Professorship (1877), . . . .	53,845.73

## SCHOLARSHIP AND BENEFICIARY FUNDS.

12,964.47	Abner W. Buttrick (1880), . . . . .	13,088.78
5,223.58	Thomas Cary (1820), . . . . .	5,469.11
2,649.46	George Chapman (1834), . . . . .	2,673.96
4,372.78	Joshua Clapp (1839), . . . . .	4,398.31
14,471.25	Jackson Foundation (1835), . . . . .	14,831.39
5,249.14	J. Henry Kendall (1863), . . . . .	5,295.84
3,388.60	Nancy Kendall (1846), . . . . .	3,407.88
1,050.00	William Pomroy (1835), . . . . .	1,050.00
		<b>588,355.61</b>

## LAW SCHOOL FUNDS.

180,175.54	Law School (balance), . . . . .	<b>\$163,400.89</b>
3,813.81	James Barr Ames Prize (1898),	3,977.33
65,604.10	Bemis Professorship (1879), . . . .	65,687.49
23,979.82	Bussey " (1862), . . . . .	23,979.82
15,750.00	Dane " (1829), . . . . .	15,750.00
<b>\$6,290,056.66</b>	. . . Amounts carried forward, . . . .	<b>\$272,795.53 \$6,560,370.65</b>

<u>Principal, Aug. 1, 1900.</u>		<u>Principal, July 31, 1901.</u>	
\$6,290,056.66	. . . Amounts brought forward, . . .	\$272,795.53	\$6,560,870.85
47,021.25	Law School Book (1882), . . . . .	47,021.25	
100,000.00	Law School Library (1898), . . . . .	100,000.00	
8,340.81	<b>Royal</b> Professorship (1781), . . . . .	8,340.81	
1,210.08	Scholarship money returned (balance),	1,266.95	
94,994.97	<b>Weld</b> Professorship (1882), . . . . .	94,994.97	524,419.51

## LAWRENCE SCIENTIFIC SCHOOL FUNDS.

30,686.85	<b>John B. Barringer</b> (1873), . . . . .	\$30,686.85	
5,570.07	<b>George A. Gardner</b> (1892), . . . . .	5,684.09	
10,417.52	<b>Hennen Jennings</b> Scholarship (1898),	10,507.17	
61,586.43	<b>Abbott Lawrence</b> (1859), . . . . .	61,586.43	
50,875.00	<b>James Lawrence</b> (1865), . . . . .	50,875.00	
40,805.73	Professorship of Engineering (1847),	40,805.73	
25,000.00	<b>Arthur Rotch</b> (1895), . . . . .	25,000.00	
5,047.26	<b>Stuart Wadsworth Wheeler</b> (1898),	5,109.47	229,704.74

## MUSEUM OF COMPARATIVE ZOOLOGY FUNDS.

29,291.85	Museum of Comparative Zoölogy (bal.),	\$31,745.35	
297,933.10	<b>Agassiz</b> Memorial (1875), . . . . .	297,933.10	
7,594.01	Teachers' and Pupils' (1875), . . . . .	7,594.01	
5,485.69	<b>Virginia Barret Gibbs</b> Scholar- ship (1892), . . . . .	5,576.87	
50,000.00	<b>Gray</b> Fund for Zoölogical Museum (1859), . . . . .	50,000.00	
108,708.65	<b>Sturgis Hooper</b> (1865), . . . . .	108,359.56	
7,740.66	<b>Humboldt</b> (1869), . . . . .	7,740.66	
	<b>Willard Peele Hunnewell</b> (1901),	5,000.00	
117,469.34	Permanent (1859), . . . . .	117,469.34	
2,292.65	Gifts, Collection of Mammal Skins,		681,418.89

PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY  
AND ETHNOLOGY FUNDS.

11,244.87	<b>Hemenway</b> Fellowship (1891), . . . . .	\$11,348.39	
28,355.56	<b>Peabody</b> Building (1866), . . . . .	28,355.56	
47,335.10	<b>Peabody</b> Collection (1866), . . . . .	47,335.10	
47,496.03	<b>Peabody</b> Professor (1866), . . . . .	47,535.39	
30,151.28	<b>Thaw</b> Fellowship (1890), . . . . .	30,165.30	
10,253.64	<b>Henry C. Warren</b> Exploration (1899), . . . . .	10,300.58	
5,260.12	<b>Robert C. Winthrop</b> Scholarship (1895), . . . . .	5,807.34	
10,000.00	<b>Huntington Frothingham Wol-</b> <b>cott</b> (1891), . . . . .	20,061.25	200,408.91
\$7,587,675.18	. . . Amounts carried forward, . . . . .		\$8,146,322.90

<u>Principal, Aug. 1, 1900.</u>		<u>Principal, July 31, 1901.</u>
\$7,587,675.18	. . . Amounts brought forward, . . . . .	\$8,146,322.90

## MEDICAL SCHOOL FUNDS.

56,788.10	Medical School (balance), . . . . .	\$64,397.93
8,989.60	Edward Austin (Bacteriological Laboratory) (1899), . . . . .	10,855.97
25,512.68	Edward M. Barringer (1881), . . . . .	25,512.68
6,044.93	J. Ingersoll Bowditch (1889), . . . . .	6,162.89
3,205.33	Boylston Fund for Medical Books (1800), . . . . .	3,033.02
18,591.77	John B. & Buckminster Brown Professorship (1896), . . . . .	19,465.59
92,750.54	Caroline Brewer Croft (1899), . . . . .	92,912.09
270,244.83	Calvin Ellis (1899), . . . . .	316,737.42
51,015.06	Lucy Ellis (1899), . . . . .	60,961.27
100,872.51	George Fabyan (1896), . . . . .	101,338.02
1,836.08	Samuel E. Fitz (1884), . . . . .	1,836.08
	F. B. Greenough (Surgical Re- search) (1901), . . . . .	1,019.60
19,192.65	Jackson Medical (1859), . . . . .	19,192.65
1,532.08	Medical Library (1872), . . . . .	1,604.12
52,900.33	William O. Moseley (1897), . . . . .	52,900.33
88,750.00	New Subscription (1888), . . . . .	88,750.00
9,335.94	Dr. Rupperer (1897), . . . . .	9,335.94
17,129.20	Geo. C. Shattuck (1853), . . . . .	50,000.00
6,819.95	Surgical Laboratory (1897), . . . . .	6,069.08
15,765.11	Mary W. Swett (1884), . . . . .	15,765.11
20,000.00	Samuel W. Swett (1884), . . . . .	20,000.00
2,000.00	Quincy Tufts (1879), . . . . .	2,000.00
14,067.03	Warren Fund for Anatomical Mu- seum (1848), . . . . .	14,340.55
15,256.50	Charles Wilder (1900), . . . . .	41,279.10
33,029.15	Henry Willard Williams (1893), . . . . .	33,331.51
3,756.82	Gifts for Pathological Dep't Library (balance), . . . . .	1,832.08
404.48	Sundry Gifts (unexpended balances), . . . . .	1,087.41
FELLOWSHIP FUNDS.		
5,269.46	Geo. Cheyne Shattuck Memorial (1891), . . . . .	5,292.10
5,539.40	Charles Eliot Ware Memorial (1891), . . . . .	5,664.73
5,232.10	John Ware Memorial (1891), . . . . .	5,253.00
SCHOLARSHIP FUNDS.		
	Lucius F. Billings (1900), . . . . .	5,025.22
5,891.51	D. W. Cheever (1889), . . . . .	5,709.03
3,069.90	Cotting Gift (1900), . . . . .	3,089.19
\$8,498,268.22	. . . Amounts carried forward, . . . . .	\$1,041,808.81 \$8,146,322.90



<u>Principal, Aug. 1, 1900.</u>		<u>Principal, July 31, 1901.</u>
\$8,498,268.22	. . . Amounts brought forward, . . .	\$1,041,803.81 \$8,146,822.90
2,698.95	<b>Orlando W. Doe</b> (1893), . . . . .	2,765.80
150.42	<b>John Foster</b> income for Medical Students (balance), . . . . .	60.42
5,807.63	<b>Lewis and Harriet Hayden</b> (1894),	5,817.63
6,222.63	<b>C. M. Jones</b> (1893), . . . . .	6,365.11
5,266.20	<b>Alfred Hosmer Linder</b> (1895),	5,233.70
5,462.78	<b>Charles B. Porter</b> (1897), . . . . .	5,519.54
4,303.96	<b>Charles Pratt Strong</b> (1894), . . . . .	4,406.25
6,250.60	<b>Isaac Sweetser</b> (1892), . . . . .	6,294.40
5,188.03	<b>John Thompson Taylor</b> (1899),	5,281.87
5,285.67	<b>Edward Wigglesworth</b> (1897), . . . . .	5,254.11

## PRIZE FUNDS.

3,476.53	<b>Boylston</b> (1803), . . . . .	3,527.45
5,930.89	<b>William H. Thorndike</b> (1895),	6,209.65
		1,098,489.74

## DENTAL SCHOOL FUNDS.

33,283.06	Dental School (balance), . . . . .	\$37,370.04
2,255.85	Dental School Endowment (1880), . . . . .	2,255.85
23,000.00	<b>Henry C. Warren</b> Endowment (1889),	23,000.00
18,064.29	Gifts for Building (1892), . . . . .	18,913.80
		81,539.19

## OBSERVATORY FUNDS.

2,249.36	Observatory (balance), . . . . .	\$2,792.80
	Advancement of Astronomical Science (1901), . . . . .	50,088.55
5,000.00	<b>Thomas G. Appleton</b> (1884), . . . . .	5,000.00
2,500.00	<b>J. Ingersoll Bowditch</b> (1889), . . . . .	2,500.00
200,802.57	<b>Uriah A. Boyden</b> (1887), . . . . .	198,965.70
94.66	<b>Bruce</b> Gift (balance), . . . . .	94.66
966.16	<b>Draper Memorial</b> (balance), . . . . .	299.39
2,000.00	<b>Charlotte Harris</b> (1877), . . . . .	2,000.00
45,000.00	<b>Haven</b> (1898), . . . . .	45,000.00
21,000.00	<b>James Hayward</b> (1866), . . . . .	21,000.00
50,000.00	Observatory Endowment (1882), . . . . .	50,000.00
50,000.00	<b>Paine Professorship</b> (1886), . . . . .	50,000.00
273,557.86	<b>Robert Treat Paine</b> (1886), . . . . .	273,557.86
110,293.88	<b>Edward B. Phillips</b> (1849), . . . . .	110,293.88
11,187.35	<b>Josiah Quincy</b> (1866), . . . . .	11,713.14
34,846.70	<b>David Sears</b> (1845), . . . . .	35,665.61
13,380.00	<b>Augustus Story</b> (1871), . . . . .	13,380.00
		872,351.59

## BUSSEY INSTITUTION FUNDS.

24,422.84	<b>Bussey Institution</b> (balance), . . . . .	\$27,189.93
11,618.45	<b>Woodland Hill</b> (1895), . . . . .	10,538.34
		87,728.27
\$9,489,835.54	. . . Amounts carried forward, . . . . .	\$10,236,431.69

Principal,  
Aug. 1, 1900.

Principal, July 31, 1901.

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 \$9,489,885.54 . . . Amounts brought forward, . . . . . \$10,286,481.69
 

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## ARNOLD ARBORETUM FUNDS.

29,500.00	Arnold Arboretum (1899), . . . . .	\$71,795.00	
158,575.15	James Arnold (1872), . . . . .	158,947.80	
6,459.28	Arboretum Construction Gifts (bal.),	16,155.04	
22,183.39	William L. Bradley (1897), . . .	22,261.98	269,159.77

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## OTHER FUNDS FOR SPECIAL PURPOSES.

5,152.59	Anonymous (1896), . . . . .	\$5,194.78	
441,399.94	Edward Austin (1899), . . . . .	471,109.26	
50,000.00	Bright Legacy (1880), . . . . .	50,000.00	
	Phillips Brooks House Endow- ment (1901), . . . . .	10,506.66	
27,929.80	Bursar's Sundry Accounts (balance),	38,747.12	
392,710.18	Bussey Trust (1861), . . . . .	392,710.18	
1,160.00	Fund of the Class of 1834 (1887),	1,207.52	
6,804.35	“ “ “ 1844 (1896),	7,078.64	
3,725.00	“ “ “ 1853 (1887),	3,725.00	
105,503.59	Calvin and Lucy Ellis Aid (1899),	158,786.55	
47,555.65	William Hayes Fogg (1892), . .	50,000.00	
3,171.50	John Foster (1840), . . . . .	3,171.50	
3,683.77	Free Bed Fund of the Class of 1868 (1898), . . . . .	5,084.55	
	Free Bed Fund for Stillman Infirmary (1900), . . . . .	514.66	
185,458.08	Gains and Losses for General Invest- ments (1891), . . . . .	185,458.08	
15,851.77	Gray Fund for Engravings (1858),	16,988.58	
719,291.31	Price Greenleaf (1887), . . . . .	719,291.31	
29,939.38	Henry Harris (1888), . . . . .	29,939.38	
1,271.87	Harvard Memorial Society (1898),	1,259.78	
46,898.04	Robert Troup Paine (1880), . .	48,237.44	
15,814.07	William M. Prichard (1898), . .	15,979.01	
32,786.97	John Witt Randall (1892), . . .	32,384.76	
5,296.57	John W. and Belinda L. Randall (1897), . . . . .	5,345.53	
42,000.00	James Savage (1873), . . . . .	42,000.00	
4,128.38	School of Comparative Medicine (1899),	4,322.40	
10,057.00	Ralph H. Shepard (1900), . . .	10,147.91	
5,772.99	Ralph Hamilton Shepard Memo- rial (1898), . . . . .	5,897.78	
	Henry P. Walcott (1901), . . .	2,524.49	
60,092.63	Gifts for Cuban Teachers, . . . . .	2,331.00	
5,065.08	Gift for Pathological Laboratory (Veterinary School), . . . . .	5,166.38	

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 \$11,975,023.82 . . . Amounts carried forward, . . . \$2,325,060.20 \$10,505,591.48
 

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<u>Principal, Aug. 1, 1900.</u>		<u>Principal, July 31, 1901.</u>
<b>\$11,975,023.82</b>	. . . Amounts brought forward, . . .	<b>\$2,325,060.20</b>
	<b>Gifts for Additions to Soldier's Field</b>	
	(1898), . . . . .	5,047.77
120,582.65	Architecture Building (balance), . .	55,916.69
30,000.00	Brighton Marsh Fence " . .	517.91
50.00	Phillips Brooks House (balance),	
22,786.04	New Boat House " "	
188,638.06	Pierce Hall " "	80,668.06
49,748.63	Semitic Building " "	36,251.87
13,260.47	John Simpkins Hall " "	1,627.32
97,971.98	Stillman Infirmary " "	33,111.49
100,255.56	University Museum Building " "	43,171.59
	F. L. Higginson's Gift (The Harvard Union), . . . . .	10,096.11
	Sundry balances, . . . . .	1,318.20
		<b>2,592,787.21</b>

FUNDS IN TRUST FOR PURPOSES NOT  
CONNECTED WITH THE COLLEGE.

16,347.61	Daniel Williams (1716), . . . .	\$16,370.09	
4,783.37	Sarah Winslow (1790), . . . .	4,789.85	21,159.94
<b>\$12,614,448.19</b>			<b>\$13,119,588.61</b>

*Changes in the Funds during the year ending July 31, 1901.*

Total amount of Funds and balances, July 31, 1901, as before stated, . . . . .	\$13,119,538.61	
Total amount of Funds and balances, August 1, 1900, as before stated, . . . . .	13,614,448.19	
Showing a total increase during the year of . . . . .		<u>\$505,090.42</u>

Which is made up as follows:—

Gifts forming new Funds or increasing old ones, . . . . .	\$826,669.43	
Increase of Funds established during the year, . . . . .	525.22	
Credit balances created, . . . . .	28,461.70	
Gain from change of investments, . . . . .	746.86	
Increase of Insurance and Guaranty Fund, by excess of income over expenditures in Uni- versity, College, and Library accounts, . . . . .	2,347.91	
	<u>\$858,751.12</u>	
Deduct from this amount		
Sundry balances used up, . . . . .	\$125,409.67	
Loss from change of investments, . . . . .	3,387.74	
Decrease more than increase of Funds and balances, which appear both at the beginning and end of the year, . . . . .	219,913.29	848,660.70
		<u>\$505,090.42</u>

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Net decrease of Funds and balances as above, . . . . .	\$848,660.70	
Less increase as above, . . . . .	37,081.69	
Leaving amount of the net decrease of the Funds and balances, excluding gifts for capital ac- count, . . . . .	\$821,579.01	

The following tables are not found, in their present form, in the Treasurer's books. They are intended to exhibit with some detail the resources and the expenditures of each department of the University. The income of every Fund held by the University is given in these tables, and also the sum paid out for the specific object of each and every Fund, in case that sum be either less or more than the actual income of the Fund. If the object to which the income of a Fund is to be applied be a general one, — like salaries, for example, — no separate mention is made in these tables of that appropriation. That particular payment is merged with others of the same kind under the general heading. A balanced summary of these tables will be found on page 92.

TABLE NO. I.  
THE UNIVERSITY.  
RECEIPTS.

Income of the following Funds:—

Andrew Bigelow, . . . . .	\$282.65
Robert C. Billings, . . . . .	4,382.79
Stanton Blake, . . . . .	285.00
Charlotte F. Blanchard, . . . . .	224.24
Samuel D. Bradford, . . . . .	246.75
John W. Carter, . . . . .	587.50
Thomas Cotton, . . . . .	7.29
John Cowdin, . . . . .	2,042.46
George B. Dorr, . . . . .	3,515.08
George Draper, . . . . .	2,198.89
Robert H. Eddy, . . . . .	773.58
Harvard Ellis, . . . . .	4,757.58
Gore, . . . . .	966.84
John C. Gray, . . . . .	757.76
Henry Harris ( $\frac{1}{2}$ income), . . . . .	708.56
Walter Hastings, . . . . .	537.39
George Baxter Hyde, . . . . .	285.00
Insurance and Guaranty, . . . . .	3,988.59
Leonard Jarvis, . . . . .	792.98
Henry P. Kidder, . . . . .	470.00
Joseph Lee, . . . . .	303.11
Theodore Lyman, . . . . .	470.00
Henry T. Morgan (part), . . . . .	1,851.70
Israel Munson, . . . . .	740.25
Francis E. Parker, . . . . .	3,449.88
William Perkins, . . . . .	1,410.00
Henry L. Pierce Residuary (part), . . . . .	19,798.75
President's, . . . . .	2,985.20
Retiring Allowance, . . . . .	16,640.68
John L. Russell, . . . . .	1,098.39
Isaac Sweetser, . . . . .	2,204.91
Seth Turner, . . . . .	285.00
William F. Weld, . . . . .	3,081.07

Amount carried forward, . . . . . \$81,774.77

## TABLE NO. I, THE UNIVERSITY, CONTINUED.

## RECEIPTS.

Amount brought forward, . . . . .			\$81,774.77
Balance remaining after dividing the net income among the Funds, . . . . .		\$299.63	
Care of the Sarah Winslow Fund, . . . . .		5.62	
Sale of catalogues, calendars, directories, &c., . . . . .		1,321.63	
“ wood and sand, . . . . .		60.00	
Use of houses by College officers, . . . . .		1,300.00	
Received on account of stolen book plates, . . . . .		156.47	8,143.85
<b>William Hayes Fogg Art Museum.</b>			
Income of William Hayes Fogg Fund, . . . . .		\$2,285.13	
“ “ Gray Fund for Engravings, . \$745.04			
Repayment, . . . . . 1,592.40		2,387.44	
“ “ William M. Prichard Fund, . . . . .		743.26	
“ “ John Witt Randall Fund, . . . . .		1,540.99	6,856.82
<b>Phillips Brooks House.</b>			
Income of Endowment, . . . . .		\$245.90	
Gift, . . . . .		45.48	\$291.38
Income of Ralph H. Shepard Fund, . . . . .			472.68
“ “ Ralph Hamilton Shepard Memorial Fund, . . . . .		271.38	1,085.39
			<u>\$92,810.33</u>

## PAYMENTS.

<b>Overseers' Expenses.</b>			
Printing President's Annual Report, . . . . .		\$1,160.76	
“ Treasurer's “ “ . . . . .		293.40	
“ other reports, . . . . .		101.75	
Advertising, . . . . .		298.05	
Anditing Treasurer's accounts, . . . . .		125.00	\$1,978.96
<b>Office Expenses.</b>			
<b>President's,</b>			
Clerical services, . . . . .		\$366.50	
Other expenses, . . . . .		122.34	\$488.84
<b>Treasurer's,</b>			
Clerical services, . . . . .		\$917.50	
Other expenses, . . . . .		1,423.41	2,340.91
<b>Bursar's,</b>			
Clerical services, . . . . .		\$3,295.90	
Other expenses, . . . . .		1,862.91	5,158.81
<b>Publication Agent's,</b>			
Clerical services, . . . . .		\$1,322.12	
Other expenses, . . . . .		2,652.26	3,974.38
Amounts carried forward, . . . . .		\$11,962.94	\$1,978.96

TABLE NO. I, THE UNIVERSITY, CONTINUED.

## PAYMENTS.

Amounts brought forward, . . . . .	\$11,962.94	\$1,978.96
<b>Office Expenses (continued).</b>		
Inspector of Grounds and Buildings',		
Clerical services, . . . . .	\$812.50	
Other expenses, . . . . .	192.92	1,005.42
Janitor's, . . . . .		17.45
Corporation Rooms (fuel, rent, &c.), . . . . .	<u>2,588.44</u>	15,524.35
<b>Salaries.</b>		
President,		
From the University, . . . . .	\$4,750.00	
" President's Fund, . . . . .	2,896.92	
" Thomas Cotton Fund, . . . . .	<u>7.07</u>	\$7,653.99
Acting President, . . . . .		2,500.00
Treasurer, . . . . .		6,000.00
Comptroller, . . . . .		5,000.00
Bursar, . . . . .		4,000.00
Assistant Bursar, . . . . .		2,000.00
Corresponding Secretary, . . . . .		1,750.00
Recording Secretary, . . . . .		2,000.00
Secretary of the Board of Overseers, . . . . .		200.00
Publication Agent, . . . . .		2,000.00
Clerks, Treasurer's office, . . . . .		3,150.00
Bursar's Assistant, . . . . .		1,700.00
Superintendent of Buildings, . . . . .		<u>2,000.00</u>
		39,953.99
Retiring Allowances, . . . . .		9,527.62
<b>Memorial Hall and Sanders Theatre.</b>		
Repairs, . . . . .	\$132.08	
Fuel, lighting, furniture, cleaning, &c., . . . . .	578.46	
Insurance, . . . . .	554.43	
Motor generator, and work for stereopticon, . . . . .	<u>538.12</u>	1,808.04
<b>General Expenses.</b>		
Repairs and improvements, . . . . .	\$2,259.00	
Janitors and cleaning, . . . . .	52.00	
Labor, . . . . .	5,054.10	
Commencement Programme, . . . . .	90.80	
Annual Catalogue and Calendar, . . . . .	2,878.31	
Furniture, . . . . .	43.50	
Advertising, . . . . .	1,600.77	
Taxes, . . . . .	490.10	
Watchmen, . . . . .	2,168.28	
Freight, supplies, and sundries, . . . . .	765.02	
Legal services and expenses, . . . . .	40.00	
Music, Commencement, . . . . .	<u>185.00</u>	
Amounts carried forward, . . . . .	\$15,626.38	\$68,787.86

TABLE NO. I, THE UNIVERSITY, CONTINUED.

## PAYMENTS.

Amounts brought forward, . . . . .	\$15,626.88	\$68,787.86
<b>General Expenses (continued).</b>		
Telephone, . . . . .	105.83	
Buffalo Exposition expenses, . . . . .	141.70	
Paris Exposition expenses, . . . . .	21.00	
Delegates' expenses, . . . . .	131.68	
Drains, . . . . .	213.39	
Street-watering assessments, . . . . .	306.11	
Plank walks, . . . . .	152.38	
Mercantile agency, . . . . .	1,113.00	
Surveys and plans, . . . . .	283.00	
Preserving old account-books, . . . . .	74.00	
Deficit in the School of Veterinary Medicine for 1900-01, . . . . .	8,456.45	
Payments made from University income on account of William Hayes Fogg Art Museum.		
Part of expenses for 1900-01, . . .	\$2,854.05	
Part of expenses for former years, repaid to William Hayes Fogg Fund, . . . . .	3,030.98	
	<u>\$5,885.03</u>	
Less repayments to the University, . .	201.07	5,683.96
Payments made from University income on account of Phillips Brooks House, . . . . .	<u>1,717.10</u>	34,025.48
<b>William Hayes Fogg Art Museum.</b>		
Payments of \$2,854.05, made from University income on account of expenses for 1900-01, as above stated, and payments from the income of Funds as follows:—		
William Hayes Fogg, Director, . . .	\$500.00	
Collections and expenses, . . . . .	2,321.76	\$2,821.76
William M. Prichard, collections, . . . . .		578.32
John Witt Randall, Curator, . . .	\$250.00	
Collections and expenses, . . . . .	1,693.20	1,943.20
Gray Fund for Engravings, Curator, . .	\$250.00	
Collections and expenses, . . . . .	1,000.63	1,250.63
		6,593.91
<b>Phillips Brooks House.</b>		
Payments of \$1,717.10, made from University income on account of expenses for 1900-01, as above stated, and payments for furniture, receptions, &c., from the income of Funds as follows:		
Phillips Brooks House Endowment, . . . . .	\$291.88	
Ralph H. Shepard, . . . . .	381.77	
Ralph Hamilton Shepard Memorial, . . . .	146.54	
Gifts, . . . . .	50.00	869.69
		<u>\$110,276.94</u>



TABLE NO. II.  
THE COLLEGE.

RECEIPTS.

From Term Bills.

Instruction, . . . . .	\$408,973.75	
Receipts from College dormitories, not included in University Houses and Lands, . . . . .	76,000.25	\$484,974.00

Income of Fellowship Funds, and Gifts for Fellowships.

Edward Austin (part), . . . . .	\$9,500.00	
Ozias Goodwin Memorial, . . . . .	497.26	
Harris, . . . . .	508.07	
John Thornton Kirkland, . . . . .	508.02	
Henry Lee Memorial, . . . . .	533.83	
Henry T. Morgan (part), . . . . .	2,000.00	
Charles Eliot Norton (gift), . . . . .	300.00	
Robert Treat Paine, . . . . .	574.76	
John Parker, . . . . .	2,599.01	
Rogers, . . . . .	1,528.68	
Henry Bromfield Rogers Memorial, . . . . .	517.34	
South End House (gifts), . . . . .	600.00	
Travelling Fellowship in Botany (gift), . . . . .	500.00	
John Tyndall, . . . . .	533.08	
James Walker, . . . . .	532.18	
Whiting, . . . . .	1,022.01	22,254.09

Income of Scholarship Funds, and Gifts for Scholarships.

Abbot, . . . . .	\$170.47	
Alford (accumulating), . . . . .	80.93	
Edward Austin (part) for Teachers, . . . . .	1,833.33	
Bartlett, . . . . .	255.82	
Bassett, . . . . .	265.83	
Bigelow, . . . . .	602.73	
Samuel A. Borden (accumulating), . . . . .	94.24	
Bowditch, . . . . .	5,261.32	
Bright ( $\frac{1}{2}$ income of Bright Legacy), . . . . .	1,175.00	
Browne, . . . . .	175.22	
Morey Willard Buckminster, . . . . .	238.71	
Burr, . . . . .	1,512.22	
Ruluff Sterling Choate, . . . . .	285.76	
Class of 1802, . . . . .	377.74	
"    1814, . . . . .	146.40	
"    1815 (Kirkland), . . . . .	302.12	
"    1817, . . . . .	206.14	
"    1828, . . . . .	164.26	
"    1835, . . . . .	223.39	
"    1841, . . . . .	190.73	
"    1852 (Dana), . . . . .	234.44	

Amounts carried forward, . . . . . \$13,796.80 \$507,228.09

## TABLE NO. II, THE COLLEGE, CONTINUED.

## RECEIPTS.

Amounts brought forward, . . . . .	\$18,796.80	\$507,226.00
Income of Scholarship Funds, and Gifts for Scholarships (continued).		
Class of 1856, . . . . .	716.99	
“ 1867, . . . . .	215.40	
“ 1883, . . . . .	250.00	
Crowninshield, . . . . .	546.84	
Warren H. Cudworth (gift), . . . . .	600.00	
Francis H. Cummings, . . . . .	249.95	
George and Martha Derby, . . . . .	258.83	
Julius Dexter, . . . . .	230.35	
Orlando W. Doe, . . . . .	126.85	
William Samuel Eliot, . . . . .	260.48	
Joseph Eveleth (part), . . . . .	1,260.21	
Fall River, . . . . .	98.70	
Farrar, . . . . .	291.92	
Richard Augustine Gambrill, . . . . .	520.48	
Charles Haven Goodwin, . . . . .	329.66	
Benjamin D. Greene, . . . . .	192.70	
Price Greenleaf, . . . . .	3,000.00	
William Hilton (part), . . . . .	635.75	
Ebenezer Rockwood Hoar, . . . . .	488.61	
Lovina Hoar, for the town of Lincoln, . . . . .	289.56	
Hodges, . . . . .	615.37	
Hollis, . . . . .	283.60	
Henry B. Humphrey, . . . . .	499.94	
Hennen Jennings, . . . . .	489.65	
George Emerson Lowell, . . . . .	477.28	
Matthews ( $\frac{1}{4}$ net rents of Hall), . . . . .	5,399.88	
William Merrick, . . . . .	276.50	
Morey, . . . . .	379.99	
Lady Mowson, . . . . .	263.01	
Howard Gardner Nichols, . . . . .	255.30	
Lucy Osgood (accumulating), . . . . .	224.99	
Pennyoy, . . . . .	203.64	
Perkins, . . . . .	195.38	
Wendell Phillips, . . . . .	68.20	
Ricardo Prize (gift), . . . . .	350.00	
Rodger, . . . . .	64.77	
Henry Bromfield Rogers, . . . . .	159.71	
Edward Russell, . . . . .	259.30	
Sales, . . . . .	255.21	
Saltonstall, . . . . .	318.66	
Leverett Saltonstall, . . . . .	293.38	
Amounts carried forward, . . . . .	\$35,693.74	\$507,226.09

## TABLE NO. II, THE COLLEGE, CONTINUED.

## RECEIPTS.

Amounts brought forward, . . . . .	\$35,698.74	\$507,228.09
<b>Income of Scholarship Funds, and Gifts for Scholarships</b>		
<i>(continued).</i>		
Mary Saltonstall, . . . . .	322.80	
Savage, . . . . .	300.00	
Sever, . . . . .	154.16	
Sewall, . . . . .	497.96	
Shattuck, . . . . .	2,265.26	
Slade, . . . . .	278.76	
Story, . . . . .	205.62	
Stoughton, . . . . .	228.63	
Swift, . . . . .	97.99	
Thayer, . . . . .	3,588.50	
Gorham Thomas, . . . . .	193.64	
Toppan, . . . . .	346.77	
Townsend, . . . . .	1,170.86	
Walcott, . . . . .	211.86	
Christopher M. Weld, . . . . .	469.72	
Jacob Wendell, . . . . .	243.86	
Whiting, . . . . .	524.66	46,798.79
<b>Income of Beneficiary Funds.</b>		
Nathaniel Appleton, . . . . .	\$22.47	
Edward Austin (part), . . . . .	2,887.50	
Frank Bolles Memorial, . . . . .	76.38	
William Brattle, . . . . .	61.66	
Thomas Danforth, . . . . .	40.14	
Moses Day, . . . . .	256.10	
Calvin and Lucy Ellis Aid (part), . . . . .	815.00	
John Ellery, . . . . .	16.07	
Exhibitions. Bequest, . . . . .	\$18.77	
Gift, . . . . .	100.00	
Interest, . . . . .	62.65	176.42
Thomas Fitch, . . . . .	30.13	
Ephraim Flynt, . . . . .	17.80	
Henry Flynt, . . . . .	6.02	
Henry Gibbs, . . . . .	18.00	
John Glover, . . . . .	119.19	
Price Greenleaf Aid (balance), . . . . .	16,184.28	
Edward Holyoke, . . . . .	14.48	
Robert Keyne, . . . . .	95.60	
Mary Lindall, . . . . .	39.48	
Susan B. Lyman, . . . . .	233.92	
Anne Mills, . . . . .	8.41	
Amounts carried forward, . . . . .	\$21,068.50	\$554,021.88

TABLE NO. II, THE COLLEGE, CONTINUED.

## RECEIPTS.

Amounts brought forward, . . . . .	\$21,068.50	\$554,021.88
<b>Income of Beneficiary Funds (continued) :—</b>		
Munroe, . . . . .	508.16	
Palfrey Exhibition, . . . . .	93.01	
<b>Dr. Andrew P. Peabody Memorial,</b>		
Repayment of Loan, . . . . .	\$25.00	
Interest, . . . . .	<u>200.74</u>	225.74
<b>Scholarship and Beneficiary Money Returned.</b>		
Loans repaid, . . . . .	1,207.82	
Joseph Sewall, . . . . .	8.04	
Alexander W. Thayer (part), . . . . .	178.73	
Quincy Tufts, . . . . .	524.28	
Benjamin Wadsworth, . . . . .	10.86	
Stuart Wadsworth Wheeler, . . . . .	<u>237.21</u>	24,060.35
<b>Income of Prize Funds.</b>		
James Gordon Bennett, . . . . .	\$62.89	
Bowdoin Prizes for Dissertations, . . . . .	689.11	
Boylston Prizes for Elocution, . . . . .	178.66	
Coolidge Debating, . . . . .	240.08	
<b>Edward Hopkins Gift for "Deturs."</b>		
From Trustees, . . . . .	\$191.28	
Interest on unexpended balance, . . . . .	<u>79.76</u>	271.04
Sales, . . . . .	49.58	
John O. Sargent, . . . . .	116.84	
George B. Sohler (part), . . . . .	250.00	
Charles Sumner, . . . . .	142.79	
Robert N. Toppan, . . . . .	164.22	
Philip Washburn, . . . . .	97.20	
David Ames Wells, . . . . .	<u>274.35</u>	2,531.76
<b>Income of Funds for Instruction, and Gifts for Salaries.</b>		
Alford Professorship, . . . . .	\$1,304.20	
John B. Barringer, . . . . .	1,442.29	
Boylston Professorship, . . . . .	1,331.84	
Class Subscription, . . . . .	7,064.01	
Paul Dudley, . . . . .	154.44	
Eliot Professorship, . . . . .	1,016.09	
Eliot " (Jon. Phillips' Gift), . . . . .	350.00	
Calvin and Lucy Ellis Aid (part), . . . . .	2,975.76	
Erving Professorship, . . . . .	164.50	
Fisher " . . . . .	1,691.58	
Henry Flynt, . . . . .	16.87	
Fund for Permanent Tutors, . . . . .	763.28	
Gospel Church ( $\frac{1}{2}$ income), . . . . .	<u>141.80</u>	
Amounts carried forward, . . . . .	\$18,416.66	\$580,618.99

TABLE NO. II, THE COLLEGE, CONTINUED.

## RECEIPTS.

	Amounts brought forward, . . . . .	\$18,416.66	\$580,618.99
<b>Income of Funds for Instruction, etc. (continued).</b>			
	<b>Asa Gray Professorship, . . . . .</b>	1,008.20	
	<b>Gurney (part), . . . . .</b>	8,144.41	
	<b>Hersey Professorship (<math>\frac{1}{2}</math> income), . . . . .</b>	570.12	
	<b>Hollis " (Divinity), . . . . .</b>	1,622.35	
	<b>Hollis " (Mathematics), . . . . .</b>	176.11	
	<b>Ingersoll Lecture (part), . . . . .</b>	189.86	
	<b>Abbott Lawrence, . . . . .</b>	2,892.19	
	<b>James Lawrence, . . . . .</b>	2,367.62	
	Lectures on Political Economy, . . . . .	444.81	
	<b>Henry Lee Professorship, . . . . .</b>	3,798.82	
	<b>Thos. Lee, for Hersey Professorship, . . . . .</b>	1,021.97	
	<b>Thos. Lee, for Reading, . . . . .</b>	742.46	
	<b>McLean Professorship, . . . . .</b>	2,023.96	
	<b>William Belden Noble Lectures (part), . . . . .</b>	600.00	
	<b>Daniel H. Peirce, . . . . .</b>	654.76	
	<b>Perkins Professorship, . . . . .</b>	987.00	
	<b>Plummer " . . . . .</b>	1,175.94	
	<b>Pope " . . . . .</b>	2,467.50	
	<b>Professorship of Engineering, . . . . .</b>	1,917.88	
	" " Hygiene (part), . . . . .	5,707.36	
	<b>Arthur Rotch, . . . . .</b>	1,175.00	
	<b>Rumford Professorship, . . . . .</b>	2,652.72	
	<b>Gurdon Saltonstall, . . . . .</b>	1,018.35	
	<b>Smith Professorship, . . . . .</b>	1,087.58	
	<b>Josiah Stickney, . . . . .</b>	602.12	
	<b>Unknown Memorial (part), . . . . .</b>	2,965.09	
	<b>Gifts for salaries and lectures, . . . . .</b>	\$7,825.00	
	<b>Interest, . . . . .</b>	29.36	7,854.36
			<u>74,285.20</u>
<b>Income of Funds for General Purposes.</b>			
	<b>J. W. P. Abbot (accumulating), . . . . .</b>	\$383.14	
	<b>John A. Blanchard, . . . . .</b>	49.35	
	<b>Jonathan Phillips, . . . . .</b>	1,480.50	1,912.99
<b>Income of Sundry Funds for Special Purposes.</b>			
	<b>Francis James Child Memorial,</b>		
	Interest, . . . . .	\$520.01	
	Gift, . . . . .	50.00	\$570.01
	<b>Classical Publication Fund of the Class of 1856,</b>		
	Interest, . . . . .	\$309.45	
	Sales, . . . . .	200.22	509.67
	<b>John Davis Williams French, . . . . .</b>	78.35	
	<b>George A. Gardner, . . . . .</b>	261.79	
	<b>Harvard Oriental Series, . . . . .</b>	705.00	
	Amounts carried forward, . . . . .	\$2,124.82	\$656,812.18

TABLE NO. II, THE COLLEGE, CONTINUED.

RECEIPTS.		
Amounts brought forward, . . . . .		
	\$2,124.82	\$656,812.18
<b>Income of Funds for Special Purposes (continued).</b>		
<b>Ingersoll Lecture (part), . . . . .</b>	<b>63.28</b>	
<b>Joseph Lovering for Physical Research, . . .</b>	<b>391.51</b>	
<b>William Belden Noble Lectures (part),</b>		
Interest, . . . . .	\$379.20	
Sales, . . . . .	19.12	398.32
<b>George W. Sawin, . . . . .</b>	<b>203.84</b>	
<b>John E. Thayer, . . . . .</b>	<b>757.08</b>	
<b>Elizabeth Torrey, . . . . .</b>	<b>55.32</b>	
<b>Henry Warren Torrey. Interest, . . \$464.78</b>		
Sales, . . . . .	843.37	808.15
<b>Unknown Memorial (part), . . . . .</b>	<b>1,800.00</b>	
<b>Samuel Ward, . . . . .</b>	<b>753.41</b>	
<b>Cyrus M. Warren, . . . . .</b>	<b>292.43</b>	
<b>Henry C. Warren, . . . . .</b>	<b>4,910.61</b>	
<b>Chauncey Wright, . . . . .</b>	<b>45.92</b>	<b>12,604.64</b>
<b>Appleton Chapel.</b>		
Income of Fund for Religious Services, . . . . .	\$48.60	
" " <b>Increase Sumner Wheeler Fund, . .</b>	<b>2,350.00</b>	<b>2,398.60</b>
<b>Jefferson Physical Laboratory.</b>		
Interest on unexpended balance, . . . . .	\$86.76	
Income of Endowment, . . . . .	3,525.00	
Gift for present use, . . . . .	500.00	
" " the improvement of ventilation, . . . . .	500.00	4,611.76
<b>Hemenway Gymnasium.</b>		
For use of lockers, . . . . .	\$3,668.50	
" " by graduates, . . . . .	30.00	3,698.50
<b>Botanic Garden and Botanic Museum.</b>		
Income of Botanic Department Fund, . . . . .	\$1,869.66	
" " <b>Lowell Fund, . . . . .</b>	<b>3,119.95</b>	
" " <b>John L. Russell Fund (part), . . .</b>	<b>23.50</b>	
" " <b>Gifts for Cases, . . . . .</b>	<b>39.45</b>	
Use of house, . . . . .	700.00	
Gifts for present use, . . . . .	802.50	
Repayment, . . . . .	369.78	6,924.84
<b>Gray Herbarium.</b>		
Income of <b>Asa Gray Memorial Fund, . . . . .</b>	<b>\$1,528.02</b>	
" " <b>Herbarium Fund, . . . . .</b>	<b>970.83</b>	
" " <b>John L. Russell Fund (part), . . .</b>	<b>70.50</b>	
<b>Asa Gray's copyrights, . . . . .</b>	<b>1,261.69</b>	
Sale of check lists and duplicate books, . . . . .	63.45	
" publications and contributions, . . . . .	79.23	
Gifts for present use, . . . . .	4,160.29	
" type specimens, . . . . .	100.00	8,234.01
Amount carried forward, . . . . .	. . . . .	\$695,284.53

TABLE NO. II, THE COLLEGE, CONTINUED.

RECEIPTS.		
	Amount brought forward, . . . . .	\$695,284.53
<b>Sundry Gifts.</b>		
For Department of Architecture, interest, . . . . .		\$773.18
“ “ “ The Classics, Interest, . . . . .	\$1.91	
	Sales, . . . . .	180.35
“ “ “ Geography (lantern) interest, . . . . .		5.78
“ “ “ Mathematics, . . . . .		15.00
“ “ “ Music, . . . . .		100.00
“ “ “ Political Economy, . . . . .		50.00
“ “ “ Sanskrit, Interest, . . . . .	\$69.71	
	Sales, . . . . .	116.21
“ Annals of Mathematics, . . . . .		57.11
“ Books on Government, . . . . .		100.00
“ Lowell Memorial Library, . . . . .		52.00
“ Norwegian photographs, . . . . .		100.00
“ Sugar-cane investigations, . . . . .	\$3,500.00	
	Interest, . . . . .	14.28
		2,514.28
“ Collections for a Germanic Museum, . . . . .	\$525.00	
	Interest, . . . . .	57.14
		582.14
“ Semitic Collection, Interest, . . . . .	\$767.14	
	Repayment, . . . . .	189.51
		956.65
“ “ Library, interest, . . . . .		80.92
“ Present use, unrestricted, . . . . .		600.00
		6,333.52
<b>Laboratory fees received.</b>		
Botany, . . . . .		\$995.00
Chemistry, . . . . .		13,137.79
Geology, . . . . .		1,127.50
Hygiene, . . . . .		1,040.00
Mineralogy, . . . . .		572.50
Mining and Metallurgy, . . . . .		899.81
Psychology, . . . . .		230.00
Physics, . . . . .		3,645.00
Zoology, . . . . .		800.00
Cambridge Manual Training School, shopwork, . . . . .		1,019.55
		23,466.65
<b>Sundries.</b>		
For use of rooms by College Society, . . . . .		\$1,260.00
Sale of tickets to Commencement Dinner, . . . . .		622.00
“ hymn books, . . . . .		69.96
“ publications, . . . . .		1,347.15
“ old examination papers, . . . . .		425.78
Fees for admission and condition examinations, . . . . .		2,993.00
“ Summer Courses, . . . . .	\$18,146.35	
Other receipts from Summer Courses, . . . . .	400.00	18,546.35
Summer Camp, Engineering, . . . . .		1,085.60
Advances to Department of Engineering repaid, . . . . .		2.00
Loans repaid, . . . . .		237.62
Salary repaid, . . . . .		100.00
Unexpended balance of appropriation returned, . . . . .		.99
		26,640.45
		<u>\$751,625.15</u>

TABLE NO. II, THE COLLEGE, CONTINUED.

## PAYMENTS.

## From Fellowship Funds and Gifts.

Edward Austin, Architecture, . . . . .	\$1,000.00	
Edward Austin, Teaching, . . . . .	8,500.00	
Harris, . . . . .	500.00	
John Thornton Kirkland, . . . . .	675.00	
Henry Lee Memorial, . . . . .	450.00	
Morgan, . . . . .	2,000.00	
Robert Treat Paine, . . . . .	250.00	
John Parker, . . . . .	2,450.00	
Rogers, . . . . .	2,175.00	
Henry Bromfield Rogers Memorial, . . . .	225.00	
South End House, . . . . .	600.00	
Travelling Fellowship in Botany, . . . . .	500.00	
John Tyndall, . . . . .	250.00	
James Walker, . . . . .	500.00	
Whiting, . . . . .	300.00	\$30,875.00

## From Scholarship Funds and Gifts.

Abbot, . . . . .	\$100.00	
Edward Austin for Teachers, . . . . .	1,838.83	
Bartlett, . . . . .	250.00	
Bassett, . . . . .	222.00	
Bigelow, . . . . .	583.34	
Bowditch, . . . . .	4,583.82	
Bright, . . . . .	1,066.66	
Browne, . . . . .	150.00	
Morey Willard Buckminster, . . . . .	200.00	
Burr, . . . . .	1,266.66	
Ruluff Sterling Choate, . . . . .	275.00	
Class of 1802, . . . . .	200.00	
“ 1814, . . . . .	125.00	
“ 1815 (Kirkland), . . . . .	316.66	
“ 1817, . . . . .	150.00	
“ 1828, . . . . .	200.00	
“ 1835, . . . . .	175.00	
“ 1841, . . . . .	200.00	
“ 1852 (Dana), . . . . .	133.34	
“ 1856, . . . . .	600.00	
“ 1867, . . . . .	175.00	
Crowninshield, . . . . .	441.66	
Warren H. Cudworth, . . . . .	600.00	
Francis H. Cummings, . . . . .	200.00	
George and Martha Derby, . . . . .	250.00	
Julius Dexter, . . . . .	166.66	
O. W. Doe, . . . . .	100.00	
William Samuel Eliot, . . . . .	833.34	

Amounts carried forward, . . . . . \$14,896.97 \$30,875.00



## TABLE NO. II, THE COLLEGE, CONTINUED.

## PAYMENTS.

Amounts brought forward, . . . . .	\$14,896.97	\$20,375.00
From Scholarship Funds and Gifts ( <i>continued</i> ).		
Joseph Eveleth, . . . . .	983.32	
Fall River, . . . . .	98.34	
Farrar, . . . . .	383.84	
Richard Augustine Gambrill, . . . . .	425.00	
Charles Haven Goodwin, . . . . .	800.00	
Benjamin D. Greene, . . . . .	150.00	
Price Greenleaf, . . . . .	8,000.00	
Hilton, . . . . .	525.00	
Ebenezer Rockwood Hoar, . . . . .	400.00	
Levina Hoar, for the town of Lincoln, . . . . .	250.00	
Hodges, . . . . .	200.00	
Hollis, . . . . .	225.00	
Henry B. Humphrey, . . . . .	450.00	
Hennen Jennings, . . . . .	400.00	
George Emerson Lowell, . . . . .	400.00	
Matthews, . . . . .	5,399.05	
William Merrick, . . . . .	183.34	
Morey, . . . . .	800.00	
Lady Mowlson, . . . . .	200.00	
Howard Gardner Nichols, . . . . .	200.00	
Pennoyer, . . . . .	100.00	
Rebecca A. Perkins, . . . . .	150.00	
Wendell Phillips Memorial, . . . . .	33.34	
Ricardo Prize, . . . . .	350.00	
Rodger, . . . . .	150.00	
Henry Bromfield Rogers, . . . . .	100.00	
Edward Russell, . . . . .	200.00	
Sales, . . . . .	266.68	
Saltonstall, . . . . .	116.66	
Leverett Saltonstall, . . . . .	133.34	
Mary Saltonstall, . . . . .	300.00	
Savage, . . . . .	300.00	
Sever, . . . . .	200.00	
Sewall, . . . . .	400.00	
Shattuck, . . . . .	2,000.00	
Slade, . . . . .	250.00	
Story, . . . . .	200.00	
Thayer, . . . . .	2,800.00	
Gorham Thomas, . . . . .	200.00	
Toppan, . . . . .	200.00	
Townsend, . . . . .	1,000.00	
Walcott, . . . . .	133.34	
Christopher M. Weld, . . . . .	300.00	
Amounts carried forward, . . . . .	\$39,097.72	\$20,375.00

TABLE NO. II, THE COLLEGE, CONTINUED.

PAYMENTS.			
	Amounts brought forward, . . . .	\$39,097.72	\$20,875.00
From Scholarship Funds and Gifts ( <i>continued</i> ).			
	Jacob Wendell, . . . . .	200.00	
	Whiting, . . . . .	400.00	
	University, Graduate School, . . . . .	3,000.00	
	"    Lawrence Scientific School, . . . . .	2,350.00	
	Normal, " " " . . . . .	900.00	45,947.72
From Beneficiary Funds.			
	Edward Austin. Appropriations, . . . . .	\$1,080.00	
	Loans to L. S. S. students, . . . . .	1,594.50	
	"    "    Special " . . . . .	263.00	\$2,887.50
	Frank Bolles Memorial, . . . . .	49.00	
	Moses Day, . . . . .	256.10	
	Calvin and Lucy Ellis Aid,		
	Beneficiaries, . . . . .	\$800.00	
	Expenses, . . . . .	15.00	815.00
	Exhibitions, . . . . .	176.42	
	Price Greenleaf Aid, . . . . .	14,769.32	
	Robert Keyne, . . . . .	5.60	
	Munroe, . . . . .	508.16	
	Palfrey Exhibition, . . . . .	80.00	
	Dr. Andrew P. Peabody Memorial, . . . . .	165.00	
	Quincy Tufts, . . . . .	524.28	
	Stuart Wadsworth Wheeler, . . . . .	175.00	
	Scholarship and Beneficiary money returned, . . . . .	1,714.56	
	College Appropriations for L. S. S. students, . . . . .	450.00	22,575.94
From Prize Funds.			
	James Gordon Bennett, . . . . .	\$40.00	
	Bowdoin Prizes for Dissertations, . . . . .	900.00	
	Boylston Prizes for Elocution, . . . . .	255.00	
	Coolidge Debating, . . . . .	200.00	
	Edward Hopkins Gift for "Deturs," . . . . .	171.74	
	Sales, . . . . .	45.00	
	John O. Sargent, . . . . .	100.00	
	George B. Sohler, . . . . .	250.00	
	Robert N. Toppan, . . . . .	150.00	
	Philip Washburn, . . . . .	75.00	2,186.74
From Sundry Funds for Special Purposes.			
	Francis James Child Memorial, . . . . .	\$473.18	
	Classical Publication Fund of the Class of 1856, . . . . .	1,067.70	
	George A. Gardner, . . . . .	147.77	
	Harvard Oriental Series, . . . . .	591.47	
	Joseph Lovering for Physical Research, . . . . .	678.87	
	Amounts carried forward, . . . . .	\$2,958.99	\$91,085.40

TABLE NO. II, THE COLLEGE, CONTINUED.

## PAYMENTS.

Amounts brought forward, . . . . .	\$2,958.99	\$91,085.40
<b>From Sundry Funds for Special Purposes (continued).</b>		
George W. Sawin, . . . . .	186.76	
John E. Thayer, . . . . .	561.21	
Unknown Memorial, . . . . .	1,891.84	
Cyrus M. Warren, . . . . .	26.92	
Chauncey Wright, . . . . .	28.22	5,153.94
<b>Appleton Chapel.</b>		
Preaching and morning services, . . . . .	\$3,180.00	
Organist and Choir-master, . . . . .	2,000.00	
Choir, . . . . .	1,600.00	
Music and binding, . . . . .	529.89	
Fuel, gas, cleaning, &c., . . . . .	1,311.38	
Furniture, . . . . .	88.44	8,659.71
<b>Jefferson Physical Laboratory.</b>		
Spent on building, from income of Fund, . . . . .	\$12.82	
Laboratory expenses, . . . . .	\$3,389.21	
Less part paid by the College, . . . . .	600.00	2,789.21
		2,802.03
<b>Hemenway Gymnasium.</b>		
Salaries and wages, . . . . .	\$5,277.81	
Janitors and cleaning, . . . . .	2,276.53	
Fuel, water, gas, printing, and sundries, . . . . .	2,047.73	
Repairs and improvements, . . . . .	492.70	
Apparatus, . . . . .	500.00	
Insurance, . . . . .	142.97	\$10,737.74
Less amount received from other departments, . . . . .	1,841.56	9,896.18
<b>Botanic Garden and Botanic Museum.</b>		
Salaries, labor, repairs, materials, &c., . . . . .	\$9,184.21	
Interest on advances, . . . . .	777.46	
Cases, from gift, . . . . .	49.65	10,011.32
<b>Gray Herbarium.</b>		
Salary, labor, repairs, materials, interest, &c., . . . . .	\$7,761.96	
Interest on advances, . . . . .	1.27	7,763.23
<b>Summer Schools.</b>		
Salaries, . . . . .	\$14,674.28	
Clerical services, . . . . .	400.00	
Supplies, materials, cleaning, &c., . . . . .	1,810.05	
Printing, . . . . .	629.89	
Advertising, . . . . .	172.30	
Instruments and apparatus, . . . . .	.68	
Stationery and postage, . . . . .	456.98	17,644.18
Amount carried forward, . . . . .		\$152,515.99

TABLE NO. II, THE COLLEGE, CONTINUED.

## PAYMENTS.

	Amount brought forward, . . . . .	\$152,515.99	
<b>From Special Gifts.</b>			
	For Department of Architecture, prints, casts, &c.,	\$3,513.62	
	“ “ The Classics, books, . . . . .	255.54	
	“ “ French, books, . . . . . \$38.28		
	Less College appropriations, . . . . .	34.87	3.41
	For Department of Geography, lantern, . . . . .	499.30	
	“ “ German, books, . . . . .	6.31	
	“ “ History, books, . . . . .	159.72	
	“ “ Mathematics, . . . . . \$43.22		
	Less amount charged to Chauncey		
	Wright Fund, . . . . .	28.22	15.00
	For Department of Music, books and music, . . . . .	12.67	
	“ “ Political Economy, books, . . . . .	179.71	
	“ “ Political Economy, apparatus, . . . . .	77.75	
	“ “ Sanskrit, services, &c., . . . . .	1,908.28	
	“ Mathematical publications, . . . . .	100.00	
	“ Music 7, . . . . .	87.80	
	“ Physical research, . . . . .	173.85	
	“ Sugar-cane investigation, . . . . .	1,458.75	
	“ Semitic collections, . . . . .	93.50	
	“ Semitic Library, . . . . .	87.68	
	“ Social Questions Library, books, . . . . .	107.60	7,040.49
<b>Appropriations for collections, laboratories, &amp;c.</b>			
	Anthropology (Prof. F. W. Putnam), . . . . .	\$150.00	
	Architecture (Prof. Warren), . . . . .	250.00	
	Botany (Dr. True), . . . . .	150.00	
	Chemistry (Prof. H. B. Hill), . . . . .	500.00	
	Engineering, expenses (Prof. Hollis), . . . . .	7,200.00	
	Fine Arts and Drawing (Prof. Moore), . . . . .	300.00	
	Landscape Architec., lantern slides (Instr. Olmsted),	900.00	
	“ “ instruments (Instr. Olmsted),	50.00	
	Mammal skins, installation (Dr. Woodworth), . . . . .	500.00	
	Metallography (Asst. Prof. Smyth), . . . . .	750.00	
	Mineralogy (Prof. Wolf), . . . . .	200.00	
	Petrography (Prof. Wolf), . . . . .	100.00	
	Physics (Prof. Trowbridge), . . . . .	1,000.00	
	Psychology (Prof. Münsterberg), . . . . .	450.00	
	Zoölogy (Prof. Mark), . . . . .	350.00	
	Zoölogy, for publications, . . . . .	400.00	
	Laboratory fees appropriated, . . . . .	22,447.10	
	Fuel and services in Nat. Hist. Laboratories, . . . . .	1,500.00	
	Fuel, services, &c., in Jefferson Ph. Laboratory,	600.00	87,097.10
	Amount carried forward, . . . . .	\$196,653.58	

## TABLE NO. II, THE COLLEGE, CONTINUED.

## PAYMENTS.

	Amount brought forward, . . . . .	\$196,658.58	
<b>Salaries.</b>			
	Instruction, . . . . .	\$366,234.99	
	Deans, . . . . .	5,500.00	
	Chairmen of Committees, . . . . .	1,400.00	
	Medical Visitor, Recorders, Secretary, Curators, &c., . . . . .	6,150.00	
	Examination Proctors, . . . . .	1,900.00	881,184.99
<b>For College Buildings not valued in Treasurer's Books.</b>			
	Repairs, improvements, &c., . . . . .	\$18,880.48	
	Cleaning and care, . . . . .	19,588.42	
	Fuel, . . . . .	7,898.04	
	Water, . . . . .	1,289.54	
	Lighting, . . . . .	5,108.76	
	Insurance, . . . . .	1,922.42	49,687.66
<b>General Expenses.</b>			
	Deans and Chairmen of Committees, clerical and office expenses, . . . . .	\$18,433.29	
	Commission on Admission to N. E. Colleges, . . . . .	151.43	
	Reading examination books, . . . . .	3,815.29	
	Services of proctors, . . . . .	1,147.92	
	"    assistants to instructors, . . . . .	3,946.62	
	"    undergraduates, . . . . .	1,108.29	
	"    mechanics in department of Physiology and Hygiene, . . . . .	900.00	
	"    Head Guide in College grounds, . . . . .	58.80	
	Expenses of Medical Visitor, . . . . .	820.45	
	Attendants in department libraries and laboratories, . . . . .	2,603.62	
	Admission examinations, . . . . .	2,753.33	
	Electric power, . . . . .	369.18	
	Pews hired in Cambridge churches, . . . . .	1,759.50	
	Commencement Dinner, . . . . .	681.64	
	Printing office, expenses, . . . . .	\$20,416.84	
	Less receipts, . . . . .	13,823.63	6,593.21
	Printing, . . . . .	243.50	
	"    for Graduate Department, . . . . .	365.66	
	Furniture, . . . . .	685.11	
	Stationery and postage, . . . . .	1,052.99	
	Books, . . . . .	48.56	
	Binding, . . . . .	15.80	
	Advertising, . . . . .	1,175.86	
	Watchmen, . . . . .	1,278.80	
	Freight, and sundries, . . . . .	768.72	
	Supplies, tools, and materials, . . . . .	616.66	
	Legal services, . . . . .	118.37	
	Music, Class-Day, . . . . .	125.00	
	Receptions, . . . . .	208.23	
	Amounts carried forward . . . . .	\$45,795.28	\$627,476.23

## TABLE NO. II, THE COLLEGE, CONTINUED.

## PAYMENTS.

Amounts brought forward, . . . . .	\$45,795.23	\$627,476.28
General Expenses ( <i>continued</i> ).		
Use of Grays 18 by English department, . . . . .	100.00	
Delegates' expenses, . . . . .	18.50	
Services and expenses at Faculty meetings, . . . . .	70.81	
Expenses on Annals of Mathematics, . . . . .	977.10	
Telephones, . . . . .	59.90	
Blank books for examinations, . . . . .	814.42	
Studies and Notes in Philology and Literature, Vol. VII, . . . . .	350.00	
Zoological laboratory contributions, . . . . .	91.91	
Re-editing Suggestions for the Study of United States History, . . . . .	125.00	
Chamber concerts, deficit, . . . . .	80.60	
Expenses in Mining 12, . . . . .	214.91	
Travelling expenses, . . . . .	99.10	
Model of Metropolitan District, . . . . .	349.12	49,096.65
		<u>\$676,572.88</u>

## TABLE NO. III.

## THE LIBRARY.

## RECEIPTS.

Income of Book Funds, and Gifts and Receipts for the purchase of books.

Nathaniel I. Bowditch, . . . . .	\$101.47
Bright ( $\frac{1}{4}$ income of the Bright Legacy), . . . . .	1,175.00
Edwin Conant ( $\frac{1}{4}$ income), . . . . .	325.92
Constantius ( $\frac{1}{4}$ income), . . . . .	609.85
Denny, . . . . .	251.36
Eliza Farrar, . . . . .	249.62
Horace A. Haven, . . . . .	148.61
Francis B. Hayes, . . . . .	474.65
George Hayward, . . . . .	247.92
Thomas Hollis, . . . . .	111.44
Sidney Homer, . . . . .	101.19
Frederick A. Lane, . . . . .	250.60
Lowell, . . . . .	1,202.03
Charles Minot, . . . . .	2,861.22
Lucy Osgood, . . . . .	338.21
Mary Osgood, . . . . .	332.38
Henry L. Pierce. Interest, . . . . .	\$4,779.24
Repayment, . . . . .	94.02
Francis Sales, . . . . .	185.70
Stephen Salisbury, . . . . .	252.91
Amount carried forward, . . . . .	<u>\$14,093.34</u>

## TABLE NO. III, THE LIBRARY, CONTINUED.

## RECEIPTS.

Amount brought forward, . . . . .	\$14,093.84	
<b>Income of Book Funds, Gifts, etc. (continued).</b>		
Sever, . . . . .	944.23	
Samuel Shapleigh, . . . . .	188.56	
George B. Sohler (part), . . . . .	88.75	
Subscription for Library, . . . . .	498.91	
Charles Sumner, . . . . .	1,765.70	
Kenneth Matheson Taylor, . . . . .	289.14	
Iohabod Tucker, . . . . .	210.48	
James Walker, . . . . .	746.78	
Thomas W. Ward, . . . . .	250.88	
Executors of Robert Waterston (balance), . .	12.69	
J. Huntington Wolcott, . . . . .	652.27	
Gifts for books, . . . . .	5,520.00	
	<u>\$25,206.73</u>	
Sales of duplicate books, . . . . .	194.48	
Received for books lost, . . . . .	44.25	
Fines, . . . . .	344.00	\$25,789.46
<b>Income of Funds for general purposes.</b>		
Daniel Austin, . . . . .	\$292.81	
Edwin Conant ( $\frac{1}{3}$ income), . . . . .	977.77	
Constantius ( $\frac{1}{3}$ income), . . . . .	609.85	
Fund of the Class of 1851 (accumulating), . .	25.05	
“ “ “ (C. F. Dunbar's Gift), . . . . .	24.67	
Price Greenleaf, . . . . .	16,134.28	
Jarvis, . . . . .	28.50	
James Savage ( $\frac{1}{3}$ net income), . . . . .	1,255.50	
Daniel Treadwell, . . . . .	560.47	
Eben Wright, . . . . .	4,700.00	24,603.90
Fees for use of Library, . . . . .	\$70.00	
Sale of Soudder catalogues, . . . . .	24.00	
Sale of Index Subject Catalogues, . . . . .	6.68	
Part of receipts on account of stolen book-plates, . . .	177.30	277.98
		<u>\$50,671.34</u>

## PAYMENTS.

<b>For Books, from the following Funds, Gifts, etc.</b>	
Bowditch, . . . . .	\$188.14
Bright, . . . . .	1,102.58
Conant, . . . . .	280.53
Constantius, . . . . .	582.92
Denny, . . . . .	290.52
Farrar, . . . . .	251.24
Haven, . . . . .	114.90
Hayes, . . . . .	493.68
Hayward, . . . . .	224.24
Hollis, . . . . .	109.82
Amount carried forward, . . . . .	<u>\$3,588.57</u>

TABLE NO. III, THE LIBRARY, CONTINUED.

PAYMENTS.	
Amount brought forward, . . . . .	\$8,588.57
For Books, from the following Funds, Gifts, etc. ( <i>conf'd</i> ).	
Homer, . . . . .	106.70
Lane, . . . . .	262.75
Lowell, . . . . .	742.19
Minot, . . . . .	3,012.81
Lucy Osgood, . . . . .	353.47
Mary Osgood, . . . . .	363.91
Pierce, . . . . .	5,558.72
Sales, . . . . .	194.81
Salisbury, . . . . .	326.20
Sever, . . . . .	896.01
Shapleigh, . . . . .	200.12
Sohier, . . . . .	110.39
Subscription Fund, . . . . .	531.51
Sumner, . . . . .	1,712.67
Taylor, . . . . .	213.98
Tucker, . . . . .	165.41
Walker, . . . . .	734.69
Ward, . . . . .	289.01
Waterston, . . . . .	46.31
J. Huntington Wolcott, . . . . .	657.68
A. C. Coolidge Gifts, . . . . .	3,391.09
Harold J. Coolidge Gift, . . . . .	50.00
J. Randolph Coolidge Gift, . . . . .	64.04
Mrs. J. R. Coolidge Gift, . . . . .	11.98
Dante Society Gift, . . . . .	23.88
H. H. Furness Gift, . . . . .	8.81
Gardner Gift, . . . . .	7.73
Gifts for David Garrick portraits, . . . . .	281.00
Hammer Gift, . . . . .	446.15
Loeb Gift, . . . . .	9.50
Duplicate money, . . . . .	444.14
Fines, . . . . .	815.89
	<b>\$35,121.97</b>
Salaries, . . . . .	\$15,220.83
Services and wages, . . . . .	17,738.44
Repairs and improvements, . . . . .	479.37
Janitors and cleaning, . . . . .	953.52
Fuel, . . . . .	1,055.71
Water, . . . . .	80.86
Lighting, . . . . .	1,072.56
Printing, . . . . .	1,548.76
Furniture, . . . . .	298.63
Stationery and postage, . . . . .	573.90
Binding, . . . . .	2,805.56
Electric power, . . . . .	116.24
Freight, supplies, and sundries, . . . . .	831.51
	<b>42,525.89</b>
	<b>\$67,647.86</b>



TABLE NO. IV.  
DIVINITY SCHOOL.

RECEIPTS.

Income of Funds for Instruction, or for general purposes.

Divinity School (balance), . . . . .	\$1,815.81	
New Endowment, . . . . .	8,857.07	
Oliver Ames, . . . . .	799.00	
Hannah C. Andrews, . . . . .	24.67	
Daniel Austin, . . . . .	41.83	
Adams Ayer, . . . . .	47.00	
Joseph Baker, . . . . .	370.12	
Beneficiary money returned (balance), . . . . .	212.35	
Bussey Professorship, . . . . .	1,766.45	
Benjamin Bussey Trust ( $\frac{1}{4}$ net income), . . . . .	3,947.88	
Joshua Clapp, . . . . .	102.36	
Edwin Conant, . . . . .	235.00	
Dexter Lectureship, . . . . .	953.16	
Frothingham Professorship, . . . . .	2,077.92	
Abraham W. Fuller, . . . . .	49.35	
Lewis Gould, . . . . .	42.82	
John Hancock Professorship, . . . . .	\$282.38	
C. L. Hancock, . . . . .	<u>3,924.43</u>	4,206.81
Haven, . . . . .	235.00	
Samuel Hoar, . . . . .	49.35	
Henry P. Kidder, . . . . .	470.00	
Henry Lienow, . . . . .	431.70	
Caroline Merriam, . . . . .	49.35	
Parkman Professorship, . . . . .	752.75	
John W. Quinby, . . . . .	20.68	
Abby Crocker Richmond, . . . . .	47.00	
John L. Russell, . . . . .	47.00	
William B. Spooner, . . . . .	470.00	
Thomas Tileston of New York Endowment, . . . . .	1,880.00	
Mary P. Townsend, . . . . .	246.75	
Winthrop Ward, . . . . .	98.70	
Winn Professorship, . . . . .	2,507.26	<u>\$26,854.64</u>

Income of Scholarship and Beneficiary Funds.

Abner W. Buttrick, . . . . .	\$609.31	
Thomas Cary, . . . . .	245.53	
George Chapman, . . . . .	124.50	
Joshua Clapp, . . . . .	205.53	
Jackson Foundation, . . . . .	680.14	
J. Henry Kendall, . . . . .	246.70	
Nancy Kendall, . . . . .	159.28	
William Pomroy, . . . . .	49.35	<u>2,320.34</u>

Amount carried forward, . . . . . \$29,174.98

TABLE NO. IV, DIVINITY SCHOOL, CONTINUED.

## RECEIPTS.

Amount brought forward, . . . . .		\$29,174.98
Income of Book Funds.		
<b>Rushton Dashwood Burr,</b> . . . . .	\$165.72	
<b>Louisa J. Hall,</b> . . . . .	30.93	196.65
Term Bills.		
Instruction, . . . . .	\$4,056.50	
Receipts from Divinity Hall and house, . . . . .	2,955.63	\$7,012.13
Summer School fees, . . . . .		1,335.00
Gift from Society for Promoting Theological Education, . . . . .		3,704.06
Sale of duplicate books, &c., . . . . .		13.34
" tickets to Alumni Dinner, . . . . .		53.00
" catalogues, . . . . .		23.10
Fines, . . . . .	7.45	12,148.07
		<u>\$41,519.70</u>

## PAYMENTS.

From Scholarship Funds.		
<b>George Chapman,</b> . . . . .	\$100.00	
<b>Joshua Clapp,</b> . . . . .	180.00	
<b>Jackson,</b> . . . . .	320.00	
<b>J. H. Kendall,</b> . . . . .	200.00	
<b>Nancy Kendall,</b> . . . . .	140.00	940.00
From Beneficiary Funds.		
<b>Abner W. Buttrick,</b> . . . . .	\$535.00	
<b>William Pomroy,</b> . . . . .	47.80	582.88
From Book Funds.		
<b>Louisa J. Hall,</b> . . . . .		.43
Salaries for instruction, . . . . .	\$25,627.65	
" " " Summer School, . . . . .	1,473.83	
Secretary and Librarian, . . . . .	1,500.00	
Services and wages, . . . . .	261.26	
Library Assistants, . . . . .	1,156.97	
Labor, repairs, and improvements, . . . . .	514.66	
Cleaning and care of rooms, . . . . .	1,373.66	
Fuel, . . . . .	558.80	
Water, . . . . .	83.53	
Lighting, . . . . .	360.00	
Printing, . . . . .	233.57	
Furniture, . . . . .	150.49	
Stationery and postage, . . . . .	158.46	
Books, . . . . .	769.95	
Binding, . . . . .	60.25	
Insurance, . . . . .	45.00	
Amounts carried forward, . . . . .	\$34,328.08	\$1,523.31

TABLE NO. IV, DIVINITY SCHOOL, CONTINUED.

## PAYMENTS.

Amounts brought forward, . . . . .	\$34,328.08	\$1,528.81
Advertising, . . . . .	584.88	
Diplomas and sundries, . . . . .	89.65	
Taxes on Chelsea Real Estate, . . . . .	39.56	
Alumni dinner, . . . . .	61.00	
Proportion of expenses of Gymnasium, . . . . .	55.66	
Installing, tuning, and repairs, new organ, . . . . .	411.57	
American School for Oriental study and research in Palestine (1st payment), . . . . .	100.00	
Subscription to the Fellowship in Christian Archaeology in the American School of Classical Studies in Rome, .	50.00	
Drawings and estimates for alterations of Library building, . . . . .	150.00	
Appraisal of C. L. Hancock real estate, . . . . .	100.00	85,969.90
		<u>\$87,493.21</u>

TABLE NO. V.

## LAW SCHOOL.

## RECEIPTS.

<b>Income of Funds.</b>		
Law School, balance, . . . . .	\$6,118.27	
<b>James Barr Ames</b> Prize, . . . . .	163.52	
<b>Bemis</b> Professorship, . . . . .	3,083.39	
<b>Benjamin Bussey</b> Professorship, . . . . .	1,127.06	
<b>Benjamin Bussey</b> Trust ( $\frac{1}{4}$ net income), . . .	3,947.38	
<b>Nathan Dane</b> Professorship, . . . . .	740.25	
<b>John Foster</b> , income for Law Students every second year, . . . . .	149.04	
Law School Book, . . . . .	2,209.99	
Law School Library, . . . . .	4,700.00	
<b>Isaac Royall</b> Professorship, . . . . .	392.03	
<b>Weld</b> " " . . . . .	4,464.76	
Scholarship money returned, . . . . .	56.87	\$27,152.56
Term Bills, instruction, . . . . .	\$95,525.00	
Sale of Law School Quinquennial Catalogue, . . . . .	4.65	
" books, . . . . .	55.75	95,585.40
		<u>\$122,737.96</u>

## PAYMENTS.

Salaries for instruction, . . . . .	\$49,133.33
Librarian and Assistants, . . . . .	6,820.23
Secretary, . . . . .	1,000.00
Amount carried forward, . . . . .	\$56,953.56

TABLE NO. V, LAW SCHOOL, CONTINUED.

## PAYMENTS.

Amount brought forward, . . . . .	\$56,958.56	
Reader to the <b>Dane Professor</b> , . . . . .	464.29	
Services of proctors, . . . . .	551.25	
Scholarships, . . . . .	3,100.00	
Repairs and improvements, . . . . .	862.64	
Janitor, cleaning, &c., . . . . .	1,495.56	
Fuel, . . . . .	954.02	
Water, . . . . .	40.66	
Lighting, . . . . .	1,410.72	
Printing, . . . . .	336.36	
Furniture, . . . . .	215.86	
Stationery and postage, . . . . .	563.21	
Books, . . . . .	11,884.67	
Binding, . . . . .	2,666.13	
Advertising, . . . . .	216.26	
Freight, diplomas, and sundries, . . . . .	874.45	
Proportion of expenses of <b>Gymnasium</b> , . . . . .	1,285.90	
Insurance, . . . . .	57.00	
Travelling expenses, . . . . .	55.82	
Electric power, . . . . .	50.00	
Legal services, . . . . .	66.38	
Catalogue, . . . . .	222.35	
Electric light wiring and supervision, . . . . .	2,009.26	
Electric light fixtures, . . . . .	2,518.70	
Picture frames, . . . . .	238.68	
Restoring portraits, . . . . .	115.00	\$89,208.83

TABLE NO. VI.

## MEDICAL SCHOOL.

## RECEIPTS.

Income of Funds for Instruction, or for general purposes.

Medical School, balance, . . . . .	\$2,668.57
<b>Edward M. Barringer</b> (part), . . . . .	699.11
<b>John B. and Buckminster Brown</b> , . . . . .	873.82
<b>Caroline Brewer Croft</b> (part), . . . . .	1,500.00
<b>Calvin Ellis</b> , . . . . .	12,288.64
<b>Lucy Ellis</b> , . . . . .	2,389.57
<b>George Fabyan</b> (part), . . . . .	4,000.00
<b>Samuel E. Fitz</b> , . . . . .	86.29
<b>Henry Harris</b> ( $\frac{1}{4}$ income), . . . . .	703.57
<b>Hersey Professorship</b> ( $\frac{1}{2}$ income), . . . . .	380.08
<b>Jackson</b> , . . . . .	902.07
Amount carried forward, . . . . .	\$26,491.72

TABLE NO. VI, MEDICAL SCHOOL, CONTINUED.

## RECEIPTS.

Amount brought forward, . . . . .	\$26,491.72	
<b>Income of Funds for Instruction, or for general purposes (continued).</b>		
William O. Moseley, . . . . .	2,486.30	
New subscription, . . . . .	1,821.25	
Dr. Rupper, . . . . .	438.79	
George C. Shattuck, . . . . .	828.28	
Mary W. Swett, . . . . .	740.95	
Samuel W. Swett, . . . . .	940.00	
Quincy Tufts, . . . . .	94.00	
Henry Willard Williams, . . . . .	1,552.86	\$35,898.65
<b>Income of Fellowship Funds.</b>		
Edward Austin (part) Teaching, . . . . .	\$3,500.00	
George Cheyne Shattuck Memorial, . . . . .	247.64	
Charles Eliot Ware " . . . . .	260.33	
John Ware " . . . . .	245.90	3,253.87
<b>Income of Scholarship Funds.</b>		
Edward M. Barringer (part), . . . . .	\$500.00	
Lucius F. Billings, . . . . .	225.22	
David Williams Cheever, . . . . .	267.52	
Cotting Gift, . . . . .	144.29	
Orlando W. Doe, . . . . .	126.85	
Joseph Eveleth (part), . . . . .	600.00	
Lewis and Harriet Hayden, . . . . .	272.98	
William Hilton (part), . . . . .	450.00	
C. M. Jones, . . . . .	292.48	
Alfred Hosmer Linder, . . . . .	247.50	
Charles B. Porter, . . . . .	356.76	
Charles Pratt Strong, . . . . .	202.29	
Isaac Sweetser, . . . . .	293.80	
John Thomson Taylor, . . . . .	243.84	
Edward Wigglesworth, . . . . .	248.44	4,371.97
<b>Income of Prize Funds.</b>		
Ward Nicholas Boylston, . . . . .	\$163.42	
William H. Thorndike, . . . . .	278.76	442.18
<b>Income of Sundry Funds for special purposes.</b>		
Edward Austin (part), . . . . .	\$300.00	
Edward Austin (Bacteriological Laboratory), . . . . .	475.40	
J. Ingersoll Bowditch, . . . . .	284.12	
Ward Nicholas Boylston, for Medical Books, . . . . .	150.64	
Caroline Brewer Croft (part), . . . . .	811.25	
George Fabyan (part). Interest, . . . . .	\$741.08	
Gift, . . . . .	25.00	766.08
Amounts carried forward, . . . . .	\$3,787.44	\$43,461.67

## TABLE NO. VI, MEDICAL SCHOOL, CONTINUED.

## RECEIPTS.

Amounts brought forward, . . . . .	\$2,787.44	\$43,461.67
Income of Sundry Funds for special purposes ( <i>conf'd</i> ).		
Medical Library, . . . . .	72.04	
Gifts for Pathological Department Library, . . . . .	61.78	
Surgical Laboratory. Interest, . . . . .	\$320.54	
Gifts, . . . . .	400.00	720.54
F. B. Greenough (surgical research), . . . . .	19.60	
Warren Fund for Anatomical Museum, . . . . .	661.14	4,322.54
Gifts for present use, . . . . .		1,938.00
Term Bills.		
Instruction, . . . . .	\$105,869.00	
Graduation fees, . . . . .	3,450.00	
Matriculation fees, . . . . .	970.00	
Examination fees, . . . . .	483.00	
Admission Chemistry, fees, . . . . .	820.00	
Operative Surgery, fees, . . . . .	213.00	
Embryology, fees, . . . . .	786.60	
Bandaging, fees, . . . . .	84.75	
Chemistry, breakage and chemicals, . . . . .	2,070.25	
Physiology, material, . . . . .	841.32	
Practical Anatomy, material, . . . . .	1,494.00	117,081.92
Graduate courses, fees, . . . . .	\$1,065.00	
Summer " " . . . . .	4,181.71	5,246.71
From Dental School, for laboratory instruction, . . . . .	\$4,100.00	
Repayment of advances for the purchase of microscopes, . . . . .	1,608.30	
Sale of barrels, . . . . .	9.00	5,717.30
		<u>\$177,768.14</u>

## PAYMENTS.

From Fellowship Funds.		
Edward Austin, Teaching, . . . . .	\$2,500.00	
George Cheyne Shattuck Memorial, . . . . .	225.00	
Charles Eliot Ware Memorial, . . . . .	135.00	
John Ware Memorial, . . . . .	225.00	\$3,085.00
From Scholarship Funds.		
Edward M. Barringer, . . . . .	\$500.00	
Lucius F. Billings, . . . . .	200.00	
David Williams Cheever, . . . . .	250.00	
Cotting Gift, . . . . .	125.00	
Orlando W. Doe, . . . . .	60.00	
Joseph Eveleth, . . . . .	600.00	
John Foster, income for Medical Students (bal.), . . . . .	90.00	
Lewis and Harriet Hayden, . . . . .	262.98	
William Hilton, . . . . .	450.00	
C. M. Jones, . . . . .	150.00	
Amounts carried forward, . . . . .	\$2,687.98	\$3,085.00

TABLE NO. VI, MEDICAL SCHOOL, CONTINUED.

PAYMENTS.			
	Amounts brought forward, . . . . .	\$2,687.98	\$3,085.00
<b>From Scholarship Funds (continued).</b>			
	Alfred Hosmer Linder, . . . . .	280.00	
	Charles B. Porter, . . . . .	200.00	
	Charles Pratt Strong, . . . . .	100.00	
	Isaac Sweetser, . . . . .	250.00	
	John Thomson Taylor, . . . . .	200.00	
	Edward Wigglesworth, . . . . .	280.00	
	Faculty Scholarships, . . . . .	640.00	4,687.98
<b>From Prize Funds.</b>			
	Ward Nicholas Boylston. Prize, . . . . .	\$100.00	
	Advertising, . . . . .	12.50	112.50
<b>From Sundry Funds and Gifts for special purposes.</b>			
	Edward Austin (Bacteriological Laboratory), . .	\$109.03	
	" " (Embryological Collection), . .	300.00	
	J. Ingersoll Bowditch, . . . . .	166.06	
	Ward Nicholas Boylston for Medical Books, . . .	322.95	
	Caroline Brewer Croft (part), . . . . .	649.70	
	George Fabyan (part), . . . . .	300.52	
	Gifts for Pathological Department Library, . . .	1,236.52	
	Surgical Laboratory, . . . . .	1,471.41	
	Warren Fund for Anatomical Museum, . . . . .	387.62	
	Sundry Gifts, . . . . .	765.52	5,709.33
<b>Appropriations.</b>			
	Anatomy, . . . . .	\$3,250.00	
	Bacteriology, . . . . .	600.00	
	Chemistry, . . . . .	1,980.56	
	Clinical Medicine, . . . . .	325.00	
	Clinical Surgery, . . . . .	100.00	
	Gynaecology, . . . . .	50.00	
	Histology and Embryology, . . . . .	1,586.60	
	Hygiene, . . . . .	200.00	
	Museum, . . . . .	812.00	
	New courses, . . . . .	1,800.00	
	Obstetrics, . . . . .	250.00	
	Pathology, . . . . .	800.00	
	Pharmacology and Therapeutics, . . . . .	700.00	
	Physiology, . . . . .	2,961.32	
	Surgery, . . . . .	584.75	
	Theory and Practice, . . . . .	500.00	15,800.23
	Graduates courses, fees repaid to Instructors, . . .	\$1,065.00	
	Summer " " " " . . . . .	4,695.00	5,760.00
	Salaries for instruction, . . . . .		100,391.64
	Dental School, for laboratory instruction, . . . . .		820.00
	Amount carried forward, . . . . .		\$136,316.68

## TABLE NO. VI, MEDICAL SCHOOL, CONTINUED

## PAYMENTS.

Amount brought forward, . . . . .		\$186,816.68
<b>General Expenses.</b>		
Dean, and Secretary, . . . . .	\$800.00	
Clerical services, . . . . .	1,730.00	
Repairs and improvements, . . . . .	2,720.06	
Janitor and cleaning, . . . . .	5,165.68	
Fuel, . . . . .	1,705.10	
Water, . . . . .	1,008.00	
Lighting and gas, . . . . .	3,005.92	
Printing, . . . . .	297.88	
Furniture, . . . . .	268.99	
Instruments and apparatus, . . . . .	15.00	
Stationery and postage, . . . . .	582.09	
Advertising and catalogues, . . . . .	1,800.00	
Insurance, . . . . .	761.00	
Proctors, . . . . .	400.00	
Mechanics and laboratory attendants, . . . . .	7,375.04	
Legal services, . . . . .	71.67	
Electric power, . . . . .	1,192.41	
Freight, diplomas, and sundries, . . . . .	602.88	
Supplies and material, . . . . .	1,990.58	
Typewriters, . . . . .	87.50	
Services on account of new buildings, . . . . .	117.64	31,697.34
		<u>\$168,014.02</u>

## TABLE NO. VII.

## DENTAL SCHOOL.

## RECEIPTS.

<b>Income of Funds.</b>		
Dental School, balance, . . . . .	\$1,564.30	
Dental School Endowment, . . . . .	106.03	
Henry C. Warren Endowment, . . . . .	1,081.00	
Gifts for new building, . . . . .	849.01	\$3,600.34
Term bills for instruction, . . . . .	\$19,549.50	
Chemistry, breakage and chemicals, . . . . .	335.95	
Examination fees, . . . . .	115.00	20,000.45
From Veterinary School, for laboratory instruction, . . . . .	\$140.00	
From Medical School, " " . . . . .	820.00	
Fees from infirmary, . . . . .	5,881.89	
" laboratory, . . . . .	2,176.55	
Repayment of advances for the purchase of microscopes, . . . . .	99.00	
Sale of sweepings, . . . . .	874.01	
" scrap platinum, . . . . .	112.00	9,608.45
		<u>\$38,204.24</u>



TABLE NO. VII, DENTAL SCHOOL, CONTINUED.

PAYMENTS.	
Salaries for instruction, . . . . .	\$12,605.00
Medical School, for instruction, . . . . .	4,100.00
Curator and Librarian, . . . . .	150.00
Secretary, . . . . .	275.00
Proctors, . . . . .	156.00
Repairs and improvements, . . . . .	394.11
Janitors and cleaning, . . . . .	1,545.44
Fuel, . . . . .	171.25
Water, . . . . .	135.70
Lighting, . . . . .	429.10
Printing, . . . . .	477.21
Furniture, . . . . .	1.45
Instruments and apparatus, . . . . .	809.02
Stationery and postage, . . . . .	378.58
Books, . . . . .	9.09
Binding, . . . . .	27.95
Advertising, . . . . .	620.62
Services and wages, . . . . .	1,354.57
Supplies, etc., . . . . .	4,098.88
Freight and sundries, . . . . .	671.58
Chemical apparatus, . . . . .	150.00
Delegates' expenses, . . . . .	82.80
Bacteriology, . . . . .	100.00
Models of teeth development, . . . . .	80.00
	<b>\$38,268.25</b>

TABLE NO. VIII.

## MUSEUM OF COMPARATIVE ZOOLOGY.

RECEIPTS.	
Income of Funds.	
Museum of Comparative Zoölogy (balance), . . . . .	\$1,376.72
Agassiz Memorial, . . . . .	14,002.85
Teachers and Pupils, . . . . .	856.92
Virginia Barret Gibbs Scholarship, . . . . .	257.84
Gray Fund for Zoölogical Museum, . . . . .	2,350.00
Sturgis Hooper, . . . . .	5,066.27
Humboldt, . . . . .	363.83
Willard Peele Hunnewell, . . . . .	39.15
Permanent Fund for Museum of Zoölogy, . . . . .	5,521.04
Henry L. Pierce, . . . . .	4,700.00
	<b>\$34,084.62</b>
Gifts for a Collection of Mammal Skins, . . . . .	2,720.00
Use of lecture rooms by Radcliffe College, . . . . .	700.00
	<b>\$37,454.62</b>

TABLE NO. VIII, MUSEUM OF COMPARATIVE ZOOLOGY, CONTINUED.

## PAYMENTS.

Paid on the order of the Faculty of the Museum of Comparative Zoology, from the following Funds.

<b>Agassiz Memorial</b> , . . . . .	\$14,002.85	
<b>Teachers and Pupils</b> , . . . . .	356.92	
<b>Gray</b> , . . . . .	2,350.00	
<b>Humboldt</b> , . . . . .	363.88	
<b>William Peele Hunnewell</b> , . . . . .	39.15	
Permanent, . . . . .	5,521.04	
<b>Henry L. Peirce</b> , . . . . .	4,323.23	\$26,957.01
<b>Virginia Barret Gibbs Scholarship</b> , . . . . .	\$166.66	
<b>Sturgis Hooper, salary</b> , . . . . .	5,415.36	5,582.02
<b>Gifts for a Collection of Mammal Skins</b> , . . . . .		5,012.65
		<u>\$37,551.68</u>

## TABLE NO. IX.

PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY  
AND ETHNOLOGY.

## RECEIPTS.

Income of Funds.

<b>Hemenway Fellowship</b> , . . . . .	\$528.52	
<b>Peabody Building</b> , . . . . .	1,413.94	
<b>Peabody Collection</b> , . . . . .	2,360.29	
<b>Peabody Professor</b> , . . . . .	2,360.29	
<b>Thaw Fellowship</b> , . . . . .	1,150.05	
<b>Henry C. Warren Exploration</b> , . . . . .	481.94	
<b>Robert C. Winthrop Scholarship</b> , . . . . .	247.22	
<b>Huntington Frothingham Wolcott</b> , . . . . .	646.25	\$9,188.50
<b>Gifts for present use</b> , . . . . .		550.00
		<u>\$9,738.50</u>

## PAYMENTS.

Paid on the order of the Faculty of the Peabody Museum, from the following Funds, gifts and advances.

<b>Peabody Building</b> , . . . . .	\$1,413.94	
<b>Peabody Collection</b> , . . . . .	2,360.29	
<b>Henry C. Warren Exploration</b> , . . . . .	435.00	
<b>Huntington Frothingham Wolcott</b> , . . . . .	585.00	
Gifts, . . . . .	550.00	
Advances from general investments, . . . . .	968.29	\$6,312.52
<b>Hemenway Fellowship</b> , . . . . .	\$425.00	
<b>Peabody Professor</b> , . . . . .	2,320.93	
<b>Thaw Fellowship</b> , . . . . .	1,136.03	
<b>Robert C. Winthrop Scholarship</b> , . . . . .	200.00	4,081.96
		<u>\$10,894.48</u>

TABLE NO. X.  
OBSERVATORY.

RECEIPTS.

<b>Income of Funds.</b>		
Observatory (balance), . . . . .	\$105.70	
Advancement of Astronomical Science, . . . . .	88.55	
Thomas G. Appleton, . . . . .	235.00	
J. Ingersoll Bowditch, . . . . .	117.50	
Uriah A. Boyden, . . . . .	9,437.74	
Charlotte Harris, . . . . .	94.00	
Haven, . . . . .	2,115.00	
James Hayward, . . . . .	987.00	
Observatory Endowment, . . . . .	2,350.00	
Paine Professorship, . . . . .	2,350.00	
Robert Treat Paine, . . . . .	12,857.23	
Edward B. Phillips, . . . . .	5,183.82	
Josiah Quincy, . . . . .	525.79	
James Savage ( $\frac{1}{4}$ net income), . . . . .	418.50	
David Sears, . . . . .	1,637.81	
Augustus Story, . . . . .	623.86	\$39,132.50
<hr/>		
<b>Mrs. Henry Draper, gift for special re-</b>		
<b>search (additional), . . . . .</b>	<b>\$9,999.96</b>	
Interest on unexpended balance, . . . . .	45.40	\$10,045.36
<b>Trustees of Sturgis Fund, on account of printing Annals, . . . . .</b>	<b>2,140.36</b>	
Use of house by College officer, . . . . .	600.00	
Sale of Annals, . . . . .	116.00	
“ lantern slides, . . . . .	4.50	
“ telegraphic code-book, . . . . .	4.50	12,910.62
		<hr/>
		<b>\$52,043.12</b>
		<hr/>

PAYMENTS.

<b>From Uriah A. Boyden Fund, supplies, apparatus, services, &amp;c.,</b>	<b>\$11,274.61</b>	
“ <b>Draper Memorial, supplies, apparatus, services, &amp;c., . . . . .</b>	<b>8,013.13</b>	
Salaries, . . . . .	\$13,500.00	
Services and wages, . . . . .	6,832.67	
Repairs and improvements, . . . . .	1,303.68	
Cleaning and care of Observatory, . . . . .	523.86	
Labor, . . . . .	1,386.50	
Fuel, . . . . .	297.35	
Water, . . . . .	86.92	
Lighting, . . . . .	121.47	
Printing, . . . . .	2,586.70	
Furniture, . . . . .	309.91	
Instruments and apparatus, including repairs on same, . . . . .	951.70	
Stationery, postage, and telegraphing, . . . . .	821.45	
		<hr/>
Amounts carried forward, . . . . .	\$28,621.71	\$19,286.74

TABLE NO. X, OBSERVATORY, CONTINUED.

## PAYMENTS.

Amounts brought forward, . . . . .	\$28,621.71	\$19,286.74
Books, . . . . .	396.48	
Binding, . . . . .	374.29	
Insurance, . . . . .	20.24	
Supplies and materials, . . . . .	1,312.98	
Freight, chemicals, and sundries, . . . . .	861.08	
Use of house, . . . . .	90.00	
Electric power, . . . . .	106.55	
Jamaica Expedition expenses, . . . . .	2,000.00	83,283.88
		<u>\$52,570.07</u>

TABLE NO. XI.

## BUSSEY INSTITUTION.

## RECEIPTS.

Income of Funds.		
Bussey Institution (balance), . . . . .	\$1,147.88	
Bussey Trust ( $\frac{1}{4}$ net income), . . . . .	7,894.76	
Woodland Hill, . . . . .	514.27	\$9,556.91
Fees for instruction, . . . . .	\$2,610.00	
Sale of wood, hay, and sundries, . . . . .	178.35	
Horticultural Departm't, prizes, sale of flowers, plants, &c., . . . . .	1,747.11	
Board of horses, cattle, &c., . . . . .	6,083.44	
Use of house by College officer, . . . . .	600.00	11,168.90
		<u>\$20,725.81</u>

## PAYMENTS.

Salaries, . . . . .	\$6,950.00	
Services and wages, . . . . .	3,044.92	
Repairs and improvements, . . . . .	464.69	
Fuel, . . . . .	316.00	
Gas, . . . . .	47.40	
Water, . . . . .	20.00	
Printing, . . . . .	128.75	
Books, . . . . .	136.48	
Binding, . . . . .	47.00	
Insurance, . . . . .	26.04	
Horticultural Department, expenses, . . . . .	1,945.13	
Grain, farming tools, &c., . . . . .	2,301.72	
Sundries, . . . . .	76.25	
New greenhouses, . . . . .	2,454.34	\$17,958.72

**TABLE No. XII.**  
**ARNOLD ARBORETUM.**

**RECEIPTS.**

<b>Income of Funds.</b>			
<b>Arnold Arboretum,</b> . . . . .	<b>\$1,781.81</b>		
<b>James Arnold,</b> . . . . .	<b>7,458.03</b>		
<b>William L. Bradley,</b> . . . . .	<b>1,042.60</b>		
<b>Gifts for construction,</b> . . . . .	<b>419.52</b>	<b>\$10,646.95</b>	
<b>Interest on deposit,</b> . . . . .	<b>\$10.54</b>		
<b>Sale of grass and materials,</b> . . . . .	<b>1,251.29</b>		
<b>Gifts for present use,</b> . . . . .	<b>2,500.00</b>	<b>3,761.83</b>	
			<b>\$14,408.78</b>

**PAYMENTS.**

<b>William L. Bradley Fund, bibliography,</b> . . . . .	<b>\$964.06</b>		
<b>Salary of Director and Assistant,</b> . . . . .	<b>3,500.00</b>		
<b>Expenses of Arboretum, services, labor, &amp;c.,</b> . . . . .	<b>18,718.56</b>		
<b>Specimens and expenses for Herbarium and Museum,</b> . . . . .	<b>1,084.21</b>	<b>\$19,261.83</b>	

**TABLE No. XIII.**

**SCHOOL OF VETERINARY MEDICINE.**

**RECEIPTS.**

<b>Term Bills.</b>			
<b>Instruction,</b> . . . . .	<b>\$2,640.00</b>		
<b>Pharmacology, material,</b> . . . . .	<b>25.82</b>	<b>\$2,665.82</b>	
<b>Fees from Hospital and Forge,</b> . . . . .	<b>\$10,167.10</b>		
<b>Interest on deposit,</b> . . . . .	<b>5.77</b>		
<b>Subscriptions to Hospital,</b> . . . . .	<b>20.00</b>		
<b>Gift for Pathological Laboratory, interest,</b> . . . . .	<b>101.30</b>		
<b>Sale of hay and straw,</b> . . . . .	<b>101.93</b>		
<b>Fees for use of microscopes,</b> . . . . .	<b>84.00</b>	<b>10,480.10</b>	
			<b>\$18,095.92</b>

**PAYMENTS.**

<b>Salaries for instruction,</b> . . . . .	<b>\$6,507.50</b>		
<b>Dental School, " . . . . .</b>	<b>140.00</b>		
<b>Assistance at free clinic,</b> . . . . .	<b>101.68</b>		
<b>Laboratory assistant,</b> . . . . .	<b>70.00</b>		
<b>Clerk,</b> . . . . .	<b>350.00</b>		
<b>Stenographer,</b> . . . . .	<b>203.00</b>		
<b>Services and wages,</b> . . . . .	<b>4,254.81</b>		
<b>Proctors,</b> . . . . .	<b>21.00</b>		
<b>Scholarships,</b> . . . . .	<b>290.00</b>		
<b>Repairs and improvements,</b> . . . . .	<b>595.71</b>		
<b>Amount carried forward,</b> . . . . .	<b>\$12,538.70</b>		

TABLE NO. XIII, SCHOOL OF VETERINARY MEDICINE, CONTINUED.

## PAYMENTS.

Amount brought forward, . . . . .	\$12,588.70	
Fuel, . . . . .	288.42	
Water, . . . . .	60.45	
Lighting, . . . . .	306.65	
Printing, . . . . .	29.05	
Furniture, . . . . .	85.30	
Instruments and apparatus, . . . . .	53.96	
Stationery, postage, telephone, &c., . . . . .	421.08	
Advertising, . . . . .	288.87	
Taxes, . . . . .	299.07	
Hay, grain, supplies, &c., . . . . .	4,144.69	
Freight, diplomas, and sundries, . . . . .	294.73	
Interest on advances, . . . . .	1,220.80	
Rent, . . . . .	1,480.00	\$31,451.07

TABLE NO. XIV.

## MISCELLANEOUS FUNDS.

## Sundry Funds for Special Purposes.

*Receipts.*

Income of Funds.		
Anonymous, . . . . .		\$242.19
<b>Edward Austin.</b> Interest, . . . . .	\$21,627.05	
Loans repaid, . . . . .	103.10	
	<u>\$21,730.15</u>	
Less appropri'n's as per tables II and VI, . . . . .	17,020.83	4,709.32
<b>Bussey Trust</b> , net income from Real Estate, . . . . .		19,789.52
<b>Class of 1834</b> , . . . . .		47.52
" <b>1844</b> , . . . . .		274.29
" <b>1853</b> , . . . . .		149.00
<b>Caroline Brewer Croft</b> (part), . . . . .		2,048.05
<b>Calvin and Lucy Ellis Aid</b> (part), . . . . .		199.51
<b>Free Bed Fund of the Class of 1868</b> , . . . . .		175.78
"    "    for <b>Stillman Infirmary</b> , . . . . .		14.66
<b>Gifts for additions to The Soldier's Field</b> , \$5,000.00		
Interest, . . . . .	47.77	5,047.77
<b>Gifts for Cuban Teachers</b> , . . . . .	\$894.61	
Interest, . . . . .	215.24	1,109.85
<b>Gift for The Harvard Union</b> , . . . . .	\$10,000.00	
Interest, . . . . .	96.11	10,096.11
<b>Gifts for Land in New Hampshire</b> , . . . . .	\$10,200.00	
Interest, . . . . .	58.15	10,258.15
<b>Gospel Church</b> ( $\frac{1}{2}$ income), . . . . .		141.80
<b>Gurney</b> (part), . . . . .		1,000.00
Amount carried forward, . . . . .		<u>\$55,803.52</u>

TABLE NO. XIV, MISCELLANEOUS FUNDS, CONTINUED.

Sundry Funds for Special Purposes (*continued*).*Receipts.*

Amount brought forward, . . . . .	\$55,303.52	
Harvard Memorial Society, . . . . .	59.78	
Robert Troup Paine (accumulating), . . . . .	1,339.40	
Professorship of Hygiene (part), . . . . .	2,000.00	
John W. and Belinda L. Randall, . . . . .	248.96	
School of Comparative Medicine, . . . . .	194.02	
Sundry balances, . . . . .	1,318.20	
Alexander W. Thayer (part), . . . . .	480.00	
Henry P. Walcott, . . . . .	24.49	
Charles Wilder, . . . . .	1,379.10	
Daniel Williams, . . . . .	768.36	
Sarah Winslow, . . . . .	224.80	
Woodland Hill, . . . . .	514.27	\$63,754.90

*Payments.*

## From the following Funds and Gifts.

Anonymous, annuity, . . . . .	\$300.00	
Bussey Trust. Annuities, . . . . .	\$4,000.00	
One half of the remaining income to the Bussey Institution, . . . . .	7,894.76	
One quarter to the Divinity School, . . . . .	3,947.88	
One quarter to the Law School, . . . . .	3,947.88	19,789.52
Class of 1853, to the Secretary, . . . . .		149.00
Caroline Brewer Croft, annuity, . . . . .		2,048.05
Calvin Ellis, legal expenses, . . . . .		901.64
Calvin and Lucy Ellis Aid, legal expenses, . . . . .		451.51
Lucy Ellis, legal expenses, . . . . .		173.27
Gifts for Cuban Teachers, expenses, . . . . .		58,871.48
Gifts for land in New Hampshire, . . . . .		6,850.00
Gurney, annuities, . . . . .		1,000.00
Harvard Memorial Society, Treas. of Society, . . . . .		71.87
Professorship of Hygiene, annuity, . . . . .		2,000.00
John W. and Belinda L. Randall, Student Volunteer Committee, . . . . .		200.00
Alexander Wheelock Thayer, annuity, . . . . .		480.00
Charles Wilder, annuity, . . . . .		256.50
Daniel Williams, Treasurer of Mashpee Indians, . . . . .	\$497.26	
"    " Herring Pond Indians, . . . . .	248.62	745.88
Sarah Winslow, Minister at Tyngsborough, Mass., . . . . .	\$106.35	
Teacher at "    " . . . . .	106.35	
Commission on income, credited to Univ., . . . . .	5.62	218.32
Woodland Hill, Taxes and legal services, . . . . .	\$1,080.11	
Bussey Institut'n, income transferred, . . . . .	514.27	1,594.38
		\$96,001.42

TABLE NO. XIV, MISCELLANEOUS FUNDS, CONTINUED.

## Construction Accounts.

*Receipts.*

Architecture Building. Gift, . . . . .	\$30,000.00	
Interest, . . . . .	3,154.61	
Income of Nelson Robinson Jr. Endowment, . . . . .	11,227.62	
Repayment, . . . . .	127.52	\$44,509.75
Brighton Marsh Fence, interest, . . . . .		145.54
New Boat House. Gifts, . . . . .	\$2,500.00	
Interest, . . . . .	128.57	2,628.57
Pierce Hall. Gift, . . . . .	\$3,000.00	
Interest, . . . . .	5,889.56	8,889.56
Semitic Building. Gift, . . . . .	\$30,000.00	
Interest, . . . . .	1,895.08	21,895.08
John Simpkins Hall, interest, . . . . .		106.19
Stillman Infirmary, interest, . . . . .		2,525.21
University Museum, interest, . . . . .		3,138.82
		<b>\$38,288.67</b>

*Payments.*

For Architecture Building, . . . . .	\$109,175.71	
" Brighton Marsh Fence, . . . . .	29,627.63	
" New Boat House, . . . . .	25,414.61	
" Pierce Hall, . . . . .	138,409.56	
" Randall Hall. Advances from gen'l investments, . . . . .	11,155.56	
" Rotch Laboratory addition, Advances from general investments, . . . . .	6,637.62	
" Semitic Building, . . . . .	35,391.79	
" John Simpkins Hall, . . . . .	11,739.34	
" Stillman Infirmary, . . . . .	67,385.70	
" University Museum, . . . . .	60,222.79	495,160.31

## Sundry Accounts.

*Receipts.*

Bursar's Sundry Accounts, . . . . .	\$526,790.22	
Advances from General Investments to Botanic Department, . . . . .	\$3,076.28	
Peabody Museum of American Archae- ology and Ethnology, . . . . .	968.29	
Randall Hall, . . . . .	11,155.56	
Rotch Laboratory, . . . . .	6,637.62	21,837.75
Gains from change of Special Investments, Calvin Ellis Fund, . . . . .	\$142.75	
Calvin and Lucy Ellis Aid Fund, . . . . .	133.49	
Henry C. Warren Fund, . . . . .	470.62	746.86
Amount carried forward, . . . . .	\$549,374.83	



TABLE NO. XIV, MISCELLANEOUS FUNDS, CONTINUED.

<b>Sundry Accounts (continued).</b>			
<i>Receipts.</i>			
Amount brought forward, . . . . .	\$549,374.88		
School of Veterinary Medicine, from University Account to pay deficit of 1900-01, . . . . .	8,456.45		
<b>William Hayes Fogg Fund,</b> Sundry expenses of former years, repaid by the University, . . . . .	3,080.98		
<b>Transfers to</b>			
Gifts for Construction ( <b>Arnold Arboretum</b> ), from <b>Arnold Arboretum Fund</b> , \$15,000.00			
<b>Lowell Memorial Library</b> , from <b>E. S. Sheldon's Gift</b> , . . . . .	45.00		
<b>Henry L. Pierce Building Fund</b> , from <b>Henry L. Pierce Residuary Bequest</b> , . . . . .	27,100.00		
<b>Henry L. Pierce Residuary Bequest</b> , from <b>Henry L. Pierce Fund (Museum of Comparative Zoölogy)</b> , . . . . .	100,000.00	142,145.00	<u>\$708,007.86</u>
<i>Payments.</i>			
Bursar's Sundry Accounts, . . . . .	\$515,972.90		
Advances from General Investments, repaid by <b>Francis James Child Memorial Fund</b> , . . . . .	\$10.21		
<b>Gray Herbarium</b> , . . . . .	25.41		
<b>Henry Warren Torrey Fund</b> , . . . . .	110.62	146.24	
<b>Losses from change of Special Investments.</b>			
<b>Calvin Ellis Fund</b> , . . . . .	\$1,851.84		
<b>Henry C. Warren Fund</b> , . . . . .	1,486.40	3,887.74	
<b>Transfers from</b>			
<b>Arnold Arboretum Fund</b> , to Gifts for Construction ( <b>Arnold Arboretum</b> ), . . . . .	\$15,000.00		
<b>Henry L. Pierce Residuary Bequest</b> , to <b>Henry L. Pierce Building Fund</b> , . . . . .	27,100.00		
<b>Henry L. Pierce Fund (Museum of Comparative Zoölogy)</b> , to <b>Henry L. Pierce Residuary Bequest</b> , . . . . .	100,000.00		
<b>E. S. Sheldon's Gift</b> , to <b>Lowell Memorial Library</b> , . . . . .	45.00	142,145.00	<u>\$661,601.88</u>

## GENERAL SUMMARY OF THE TABLES.

Table.	Receipts.	Payments.	
I. University, . . . . .	\$92,810.38	\$110,276.94	
II. College, . . . . .	751,625.15	676,572.88	
III. Library, . . . . .	50,671.84	67,647.86	
IV. Divinity School, . . . . .	41,519.70	37,493.21	
V. Law School, . . . . .	122,737.96	89,208.83	
VI. Medical School, . . . . .	177,768.14	168,014.02	
VII. Dental School, . . . . .	33,204.24	28,268.25	
VIII. Museum of Comparative Zoölogy, . . . . .	37,454.63	37,551.68	
IX. Peabody Museum of American Archaeology and Ethnology, . . . . .	9,738.50	10,394.43	
X. Observatory, . . . . .	52,043.12	52,570.07	
XI. Bussey Institution, . . . . .	20,725.81	17,958.72	
XII. Arnold Arboretum, . . . . .	14,408.78	19,261.83	
XIII. School of Veterinary Medicine, . . . . .	13,095.92	21,451.07	
XIV. {	Sundry Funds for Special Purposes, . . . . .	63,754.90	96,001.42
	Construction Accounts, . . . . .	83,288.67	495,160.31
	Sundry Accounts, . . . . .	708,007.26	661,601.88
	<u>\$2,267,854.44</u>	<u>\$2,589,433.45</u>	
		<u>2,267,854.44</u>	
Balance, . . . . .		\$321,579.01	

Which is the net decrease of the Funds and balances, excluding gifts for capital account, as also shown on page 54. This decrease is more than covered by payments on account of the construction of buildings, in excess of receipts therefor in the current year.

*Certificate of the Committees of the Corporation and Overseers of Harvard College, for examining the Accounts of the Treasurer.*

The committees appointed by the Corporation and Overseers of Harvard College to examine the accounts of the Treasurer for the year ending July 31, 1901, have, with the assistance of an expert chosen by them, examined and audited the Cash-book and Journal covering the period from August 1, 1900, to July 31, 1901, inclusive, and have seen that all the bonds, notes, mortgages, certificates of stock, and other evidences of property, which were on hand at the beginning of said year, or have been received by him during said year, are now in his possession, or are fully accounted for by entries made therein; they have also noticed all payments, both of principal and interest, indorsed on any of said bonds or notes, and have seen that the amounts so indorsed have been duly credited to the College.

They have in like manner satisfied themselves that all the entries for moneys expended by the Treasurer, or charged in his books to the College, are well vouched; such of them as are not supported by counter entries being proved by regular vouchers and receipts.

They have also seen that all the entries for said year are duly transferred to the Ledger, and that the accounts there are rightly cast, and the balances carried forward correctly to new accounts.

(Signed,)

HENRY P. WALCOTT,  
ARTHUR T. CABOT,

} *Committee on the part of the  
Corporation.*

F. L. HIGGINSON,  
MOSES WILLIAMS,  
ALFRED BOWDITCH,  
WILLIAM C. ENDICOTT,  
STEPHEN M. WELD,

} *Committee on the part of the  
Board of Overseers.*

Boston, December 27, 1901.









3

THE UNIVERSITY PUBLICATIONS

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**These publications include :—**

**The Annual Reports of the President and of the Treasurer**  
**The Annual University Catalogue**  
**The Annual Catalogues of the College and the several Professional Schools of the University; the Announcements of the several Departments; etc., etc.**



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THE UNIVERSITY PUBLICATIONS

FEB 11 1903

NEW SERIES, No. 77

# ANNUAL REPORTS

OF

## THE PRESIDENT AND THE TREASURER

OF

### HARVARD COLLEGE

1901-02



CAMBRIDGE, MASS.

Published by Harvard University

JANUARY 31, 1903



# ANNUAL REPORTS

OF

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### HARVARD COLLEGE

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CAMBRIDGE

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1903



# CONTENTS.

---

	PAGES
PRESIDENT'S REPORT . . . . .	5-64
REPORTS OF DEPARTMENTS:—	
THE FACULTY OF ARTS AND SCIENCES . . . . .	65-108
THE COLLEGE . . . . .	104-120
THE LAWRENCE SCIENTIFIC SCHOOL . . . . .	121-125
ATHLETIC SPORTS . . . . .	126-134
THE GRADUATE SCHOOL . . . . .	135-170
THE DIVINITY SCHOOL . . . . .	171-180
THE LAW SCHOOL . . . . .	181-184
THE FACULTY OF MEDICINE . . . . .	185, 186
THE MEDICAL SCHOOL . . . . .	187-207
THE DENTAL SCHOOL . . . . .	208-212
THE BUSSEY INSTITUTION . . . . .	213
THE LIBRARY . . . . .	214-237
THE GRAY HERBARIUM . . . . .	238-241
THE BOTANIC GARDEN . . . . .	242-246
THE ARNOLD ARBORETUM . . . . .	247-249
THE CHEMICAL LABORATORY . . . . .	250-254
THE JEFFERSON PHYSICAL LABORATORY . . . . .	255, 256
THE DIVISION OF ENGINEERING . . . . .	257-261
THE PSYCHOLOGICAL LABORATORY . . . . .	262, 263
THE OBSERVATORY . . . . .	264-276
THE MUSEUM OF COMPARATIVE ZOOLOGY . . . . .	277-279
THE ZOOLOGICAL LABORATORY . . . . .	280-284
THE DEPARTMENT OF GEOLOGY AND GEOGRAPHY . . . . .	285-291
THE PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY AND ETHNOLOGY . . . . .	292-300
THE SEMITIC MUSEUM . . . . .	301-305
THE FOGG ART MUSEUM . . . . .	306-310
THE MINERALOGICAL MUSEUM AND LABORATORIES OF MINERALOGY AND PETROGRAPHY . . . . .	311
RADCLIFFE COLLEGE . . . . .	312-315
APPENDIX . . . . .	316-346
INDEX . . . . .	347-352
TREASURER'S STATEMENT . . . . .	1-99



## PRESIDENT'S REPORT FOR 1901-02.

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TO THE BOARD OF OVERSEERS:—

The President of the University has the honor to submit the following report for the academic year 1901-02, — namely, from September 26, 1901, to September 25, 1902.

Joseph Henry Thayer, Bussey Professor of New Testament Criticism and Interpretation, *Emeritus*, died in Cambridge on the 26th of November, 1901, in the seventy-fourth year of his age. He had retired from the service of the University in the preceding summer. His service to Harvard University began in 1877, when he was chosen a Fellow; but in 1884 he was elected to the Bussey Professorship, and thereupon resigned his seat in the Corporation. He was in active service as professor until September 1st, 1901. Professor Thayer was a candid and generous scholar, an enthusiastic teacher, and a delightful colleague. In the Divinity School he represented the conservative view of theological education and the Evangelical view of the New Testament record; but he held his opinions in the most liberal spirit, and expressed them with moderation though distinctly. As a scholar he sought thoroughness and accuracy, and grudged no labor which could contribute to the attainment of these ends. He was a member of the American Committee for the revision of the New Testament, and gave years of his life to that work; and since he survived most of the members of the American Committee, it fell to him to do a good part of the work of issuing the American Revisers' edition. This share in the Revisers' labors, and his invaluable edition of Grimm's "Wilke's Clavis Novi Testamenti" were the principal works of his life.

Ferdinand Bôcher, Professor of Modern Languages, died in Cambridge, June 7, 1902, in the seventieth year of his

age. He first entered the service of the University as an instructor in French in 1861, and served in that capacity till 1865. He was also a University lecturer in the year 1864-65. He then became Professor of Modern Languages in the Massachusetts Institute of Technology; but in 1870 returned to the University as professor. Shortly before his death he had resigned his professorship, and claimed the retiring allowance which was his due. Professor Bôcher was a skilful and interesting teacher, and a genuine lover of books and literature. For many years it had been his delight to collect French books in his specialty; so that he left at his death a library which was interesting throughout, and of special value in regard to the works of Montaigne and Molière. Through the affectionate generosity of one of his students the entire collection is to be made permanently available for Harvard students, and the most precious parts of it are already in the University Library. He was a man of simple tastes, who enjoyed his books, his friends, his students, and his frequent visits to France. His interests were in French literature and poetry, and not in romance philology; although he, with Professor James Russell Lowell, first introduced the study of Old French into Harvard College. He was not a philologist, but a man of letters.

James Bradley Thayer, Weld Professor of Law, died in Cambridge on the 14th of February, 1902, in the seventy-second year of his age. In 1873 he gave up the practice of the law, and accepted the Royall Professorship (1781). In 1883 he was transferred to a new endowed professorship to which the name of Weld was attached ten years later in honor of its founder. He therefore took part almost from the beginning in the reconstruction of the Law School, and had the satisfaction of witnessing for twenty-eight years and a half its remarkable development. To that successful development he greatly contributed by his zeal and assiduity as a teacher, and by his gradually acquired mastery of the law of evidence, a mastery demonstrated in his publications on that fundamental subject. To legal knowledge Professor Thayer added a large acquaintance with literature and a fine literary taste, which frequently appeared in both his con-



versation and his writings. He commanded the respect and admiration not only of his students but of the legal profession.

James Bradstreet Greenough, Professor of Latin, died in Cambridge on the 11th of October, 1901, in the sixty-ninth year of his age. Impaired health had obliged him to take leave of absence in the year 1900-01, and in the following year he resigned his professorship and accepted a retiring allowance. He entered the service of the University in the year 1865 as tutor in Latin, and was made assistant professor in 1873 and professor in 1883. He therefore had a continuous service of thirty-six years, always in the Latin Department. He was an enthusiastic and inspiring teacher, fond of his subject and of young men, kindly, sympathetic, and eager to render all friendly services. His studies extended much beyond the Latin language and literature; so that he contributed to the early introduction into Harvard College of instruction in Sanskrit and in Comparative Philology. His broad and accurate knowledge of Latin grammar enabled him to take an important part in the preparation of Latin grammars which became widely used. While a devoted student of the Classics, and a firm believer in the value of Latin and Greek as large constituents in liberal education, he held modern views concerning the worth of the newer subjects, and therefore contributed by his influence and his vote to some of the enlargements of the educational policy of Harvard College which were made necessary by the advance of knowledge and the changes in the professions during the last half of the nineteenth century.

Alpheus Hyatt, Assistant in Invertebrate Palaeontology at the Museum of Comparative Zoölogy, died suddenly in Cambridge on the 15th of January, 1902, having served as Assistant in that Museum for many years, much of the time without salary. He graduated at the Scientific School in 1862 in a class of fourteen members which produced no fewer than seven distinguished naturalists, all of whom were pupils of Professor Louis Agassiz. Dr. Hyatt was both zoölogist and palaeontologist, his researches lying in both these fields. His teaching work was mostly done in Boston at the Institute of Technology, and the Boston University; but he lived by far the greater part

of his life in Cambridge, near the Museum to which his most congenial labors were devoted. His candor, uprightness, and scientific humility commanded the perfect respect of his brother students, while his generous and affectionate qualities endeared him to a large circle of friends.

Mr. John Joseph Hayes, Instructor in Elocution, died on the 2d of February, 1902, in the forty-seventh year of his age, after a long and distressing illness. He had been instructor in elocution since 1886. The style of speaking he taught was simple, direct, and vigorous; and the good effects of his teaching plainly appeared whenever his students spoke in public. He had an excellent faculty for criticising the performance of each individual pupil, a faculty which was reinforced by a considerable gift for imitation. The instruction he gave was equally good for the minister, lawyer, and political debater.

James Clarke White, Professor of Dermatology, and the senior member of the Medical Faculty, resigned his chair at the end of the year 1901-02. He was first a Lecturer in the Medical School in the year 1863-64, then Adjunct Professor of Chemistry from 1866 to 1871, in 1871-72 Instructor in Medical Chemistry, and since 1871 Professor of Dermatology. He was a member of the Faculty before the reorganization of the Medical School in 1870, and was a strenuous advocate of that revolution. He has seen his subject of instruction develop from a small appendage of the department of surgery into a well-organized and well-equipped independent department of his own creation. On his resignation Dr. White was chosen Professor *Emeritus*.

The resignation of Professor Le Baron Russell Briggs as Dean of Harvard College was accepted by the Corporation with great regret. His administration was not only singularly successful as regards the discipline of the College, and the relations of the students to the teachers and the Faculty, but it was also universally acceptable. He had discharged the difficult duties of his office with ready sympathy, keen insight, steady justice, and extraordinary patience and assiduity. Nevertheless, the Corporation was obliged to recognize the fact that the state of Professor Briggs's health made necessary

his transfer to less laborious and anxious duties. He was accordingly made Dean of the Faculty of Arts and Sciences on the retirement of Professor Clement L. Smith, the state of whose health compelled him to take leave of absence for the year 1902-03. Professor Smith has had a long administrative service. He was Dean of the College Faculty from 1882 to 1890, Dean of Harvard College from 1890 to 1891, and Dean of the Faculty of Arts and Sciences from 1898 to 1902. His term of service as Dean includes eight years before the organization of the Faculty of Arts and Sciences in 1890, and five years since that Faculty was organized. He also gave much assistance to Dean Dunbar during the later years of his administration (1890-95). The series of excellent reports which Dean Smith has contributed to the President's Reports demonstrates the value of his service to the University. He took active part in the discussion of important topics during a period of grave changes, and had a large share in procuring for new measures administrative success.

The Joint Committee of the Corporation and Board of Overseers appointed early in June, 1901, to present to the General Court a bill to provide for the enlargement of the suffrage for Overseers, after having been defeated in their efforts before the legislature of 1901, succeeded before the legislature of 1902 in procuring the passage of the following Act:—

#### AN ACT

##### RELATIVE TO THE BOARD OF OVERSEERS OF HARVARD COLLEGE.

Be it enacted, etc., as follows:—

SECTION 1.—The President and Fellows of Harvard College and the Board of Overseers of said College, acting separately at meetings called for that purpose, may, after the expiration of three years from the date of the acceptance of this Act, as provided for in Section 2, determine from time to time by concurrent vote whether any, and, if any, what degrees issued by said College other than those mentioned in the first section of chapter 173 of the Acts of the year 1865 shall entitle the recipients thereof to vote for Overseers to the same extent and under the same restrictions to and under which recipients of the degree of Bachelor of Arts from said College may now so vote.

SECTION 2. — This Act shall take effect when the Board of Overseers and the President and Fellows of Harvard College, respectively, at meetings held for that purpose, shall by vote assent to the same.

[*Approved March 27, 1902.*]

This Act was assented to by the President and Fellows on September 23, 1902, and by the Board of Overseers on October 15, 1902.

The Act leaves the extension of suffrage to be determined by concurrent vote of the President and Fellows and the Board of Overseers; but these two Boards cannot take action until the expiration of three years from the date of their acceptance of the Act. This delay will enable the present holders of the suffrage to elect three new classes of Overseers before any change in the suffrage can be effected. Of the ordinary degrees conferred in 1902, 574 gave, or might have given, the right of suffrage, and 459 did not. The anomalous condition pointed out in the last Report, whereby a considerable number of Masters of Arts, who have spent only one year in Cambridge, acquire the suffrage, whereas graduates of the Scientific School, who have spent four years in Cambridge, and graduates of the Law School and the Divinity School, who have spent three years in Cambridge, do not acquire it, continues to engage the attention of careful observers of the working of the legislation which now prescribes the suffrage.

In the conduct of a university there is no more important question of policy than the most expedient division of the total expenditure among the six following groups — (1) salaries for instruction, (2) aids for students, (3) libraries, (4) museums, (5) the maintenance and care of the other public buildings (except dormitories), and (6) a miscellaneous group comprising administration, appropriations for laboratories and drafting-rooms, publications, grounds, hospitalities, and sundries. The different departments of the University differ widely in regard to the distribution of their total cost among these six groups; and the department which presents the most complex problem is the department of Arts and Sciences, because it is this department which must maintain a comprehensive library and costly laboratories and museums. The following table (I)

TABLE I - DISTRIBUTION OF EXPENSES.

GROUP 1 = Salaries for instruction, — including retiring allowances. GROUP 5 = Public buildings, — not including dormitories. Running expenses, — excluding such expenses for the buildings in Groups 3 and 4.  
 GROUP 2 = Aids, — including fellowships, scholarships, exhibitions, loans, and prizes.  
 GROUP 3 = University Library: salaries and all expenses, — including books and binding. GROUP 6 = All expenses not included in Groups 1, 2, 3, 4, 5, and 7, namely, — administration, appropriations for laboratories, drafting-rooms, publications, grounds, hospitalities and sundries.  
 GROUP 4 = Museums, — including Gray Herbarium and Botanic Garden. GROUP 7 = Observatory and Arnold Arboretum.  
 All expenses, — excluding salaries for instruction, fellowships and scholarships.

University, College, Library, Lawrence Scientific School, Museum of Comparative Zoölogy, Peabody Museum of American Archaeology and Ethnology, William Hayes Fogg Art Museum, Germanic Museum, and Semitic Museum.

	1892-93	1893-94	1894-95	1895-96	1896-97	1897-98	1898-99	1899-1900	1900-01	1901-02
GROUP 1.	\$287,721.90	\$303,640.79	\$304,660.26	\$328,227.19	\$343,232.42	\$358,649.56	\$367,166.17	\$392,386.76	\$406,294.16	\$418,515.85
Percentages.	.45	.48	.47	.42	.46	.47	.45	.44	.43	.44
GROUP 2.	71,746.70	68,877.87	68,782.14	70,009.32	72,043.67	75,324.16	78,472.85	84,005.54	98,013.09	98,599.18
Percentages.	.11	.11	.11	.09	.10	.10	.10	.09	.10	.10
GROUP 3.	50,286.87	45,944.72	48,139.12	106,032.40*	58,463.77	54,791.08	60,510.19	70,137.86	67,647.86	67,914.16
Percentages.	.08	.07	.07	.13*	.08	.07	.07	.08	.07	.07
GROUP 4.	46,804.98	46,463.39	50,406.36	68,091.29	56,024.75	53,287.23	67,177.43	60,635.83	68,506.80	70,727.81
Percentages.	.07	.07	.08	.09	.07	.07	.08	.07	.07	.07
GROUP 5.	42,081.99	35,727.06	33,742.47	49,300.35	47,837.10	33,303.34	55,984.10	71,565.01	44,471.49	56,948.33
Percentages.	.07	.06	.05	.06	.06	.04	.07	.08	.05	.06
GROUP 6.	136,093.80	132,066.30	147,057.30	161,404.80	170,382.35	186,987.79	184,850.42	210,863.73†	267,591.74†	252,875.98
Percentages.	.22	.21	.22	.21	.23	.25	.23	.24	.28†	.26
Totals,	634,736.24	632,720.13	652,787.65	783,065.85	747,984.06	762,343.16	814,161.16	889,604.72	947,525.14	960,581.26

\* Year of the reconstruction of the old part of Gore Hall. † Years of the outlay for the Cuban Teachers.

**Divinity School.**

	1892-93	1893-94	1894-95	1895-96	1896-97	1897-98	1898-99	1899-1900	1900-01	1901-02
Group 1.	\$21,427.55	\$21,227.65	\$21,339.79	\$22,092.30	\$24,337.65	\$26,991.56	\$26,440.62	\$27,451.71	\$27,101.48	\$24,826.67
Percentages,	.67	.61	.69	.70	.68	.71	.71	.65	.72	.63
Group 2.	2,236.47	2,139.07	2,104.14	2,218.32	2,162.25	2,169.46	2,108.99	2,018.20	1,572.88	2,222.69
Percentages,	.07	.06	.07	.07	.06	.06	.06	.05	.04	.06
Group 5.*	4,232.97	7,176.30	2,941.16	2,989.37	3,512.81	3,308.26	3,146.34	6,243.49	3,140.14	6,894.76
Percentages,	.13	.21	.10	.09	.10	.08	.08	.15	.09	.17
Group 6.	3,953.06	4,370.72	4,373.25	4,488.65	5,612.72	5,628.76	5,810.09	6,591.26	5,678.71	5,275.18
Percentages,	.13	.12	.14	.14	.16	.15	.15	.15	.15	.14
Totals,	31,850.05	34,913.74	30,818.34	31,788.64	35,625.43	38,096.04	37,506.04	42,304.66	37,493.21	39,159.30

\* Dormitory expenses included, cannot be separated.

**Law School.**

Group 1.	35,250.00	35,550.00	35,100.00	37,221.00	37,460.50	41,632.28	50,426.40	50,978.32	49,597.62	47,829.99
Percentages,	.57	.59	.62	.57	.45	.59	.63	.60	.56	.60
Group 2.	1,950.00	1,650.00	2,700.00	2,350.00	2,600.00	3,000.00	2,600.00	3,750.00	3,100.00	4,550.00
Percentages,	.03	.03	.05	.04	.03	.04	.03	.05	.03	.06
Group 5.	6,137.85	6,018.76	4,335.55	7,380.21	23,754.23	7,102.75	4,468.10	4,587.37	9,614.52	4,260.79
Percentages,	.10	.10	.08	.11	.28	.10	.06	.05	.11	.05
Group 6.	18,333.84	16,513.29	14,351.92	18,684.79	20,520.72	18,538.59	22,010.60	25,122.26	26,896.69	23,108.49
Percentages,	.30	.28	.25	.28	.24	.27	.28	.30	.30	.29
Totals,	61,671.69	59,732.05	56,487.47	65,638.00	84,335.45	70,273.62	79,505.10	84,437.95	89,208.83	79,749.27

**Medical School.**

Group 1.	70,847.00	75,270.00	77,360.83	85,789.15	92,442.83	99,619.00	99,910.25	103,900.00	106,971.64	106,716.66
Percentages,	.66	.65	.65	.64	.68	.69	.61	.66	.64	.65
Group 2.	2,762.50	3,665.00	3,140.00	3,532.00	3,959.75	4,598.18	4,894.03	4,932.50	7,822.98	7,602.98
Percentages,	.08	.08	.08	.08	.08	.08	.08	.08	.08	.05

Group 5.	12,434.13	15,060.24	17,382.81	18,274.73	17,311.42	17,070.84	14,578.25	14,628.83	15,827.16	15,898.70
Percentages,	.12	.13	.14	.14	.13	.12	.09	.10	.09	.10
Group 6.	20,417.98	21,217.02	22,031.80	25,983.74	21,805.44	23,460.58	44,941.97	38,164.50	37,392.24	33,861.02
Percentages,	.19	.19	.18	.19	.16	.16	.27	.21	.22	.20
Totals,	106,461.61	115,202.26	119,915.44	133,529.62	135,519.44	144,748.10	164,319.50	156,625.83	168,014.02	164,074.36

Dental School.

Group 1.	5,887.00	6,340.00	8,758.00	10,325.00	14,200.00	14,446.00	17,596.00	17,562.50	16,705.00	17,370.00
Percentages,	.48	.52	.43	.51	.50	.57	.63	.65	.59	.57
Group 5.	2,209.58	1,764.19	6,395.65	2,870.15	4,526.86	2,844.66	2,695.98	2,298.33	2,677.06	3,189.32
Percentages,	.18	.14	.31	.14	.16	.11	.10	.08	.10	.10
Group 6.	4,180.53	4,222.80	5,447.92	7,233.40	9,482.73	8,112.55	7,694.06	7,205.84	8,886.20	9,928.91
Percentages,	.34	.34	.26	.35	.34	.32	.27	.27	.31	.33
Totals,	12,277.11	12,326.99	20,601.57	20,428.55	28,209.59	25,403.21	27,986.04	27,066.67	28,268.25	30,488.23

Bussey Institution.

Group 1.	6,600.00	6,600.00	6,227.40	6,422.51	5,400.00	6,400.00	6,400.00	7,050.00	6,950.00	7,450.00
Percentages,	.52	.51	.46	.43	.33	.43	.41	.48	.39	.31
Group 5.	512.28	716.99	1,517.77	3,002.92	4,839.77	1,274.34	2,277.12	888.55	3,828.26	8,843.27
Percentages,	.04	.05	.11	.20	.29	.09	.15	.06	.18	.36
Group 6.	5,488.37	5,725.10	5,746.92	5,433.40	6,228.76	7,027.29	6,913.01	6,870.44	7,680.46	8,182.12
Percentages,	.44	.44	.43	.37	.38	.48	.44	.46	.43	.33
Totals,	12,600.65	13,042.09	13,492.09	14,858.83	16,468.53	14,701.63	15,590.13	14,808.99	17,958.72	24,475.39

Observatory and Arnold Arboretum.

Group 7 (all exp.).	69,011.18	53,717.58	56,748.44	48,629.61	50,933.60	47,192.05	50,486.57	51,228.96	52,570.07	57,766.98
Observatory,	21,819.38	16,529.38	13,709.26	12,410.33	10,529.72	14,225.40	11,576.63	21,399.04	19,261.83	23,116.23
Arnold Arboret.,	90,830.76	70,246.96	70,457.70	61,040.14	61,463.32	61,417.45	62,063.20	72,628.00	71,631.90	80,883.21
Totals,										

TABLE II - SUMMARY.

	1892-93	1893-94	1894-95	1895-96	1896-97	1897-98	1898-99	1899-1900	1900-01	1901-02
<b>GROUP 1.</b>										
Univ., Coll., etc.,	\$287,721.90	\$303,640.79	\$304,960.26	\$328,227.19	\$343,232.42	\$358,649.56	\$367,166.17	\$392,336.76	\$406,294.16	\$418,516.86
Divinity School,	21,427.55	21,227.65	21,399.79	22,092.30	24,337.65	26,991.56	26,440.62	27,451.71	27,101.48	24,826.67
Law School,	35,250.00	35,550.00	35,100.00	37,221.00	37,460.50	41,632.28	50,426.40	50,978.32	49,597.62	47,829.99
Medical School,	70,847.00	75,270.00	77,360.83	85,789.15	92,442.83	99,619.00	99,910.25	103,900.00	106,971.64	106,716.66
Dental School,	5,887.00	6,340.00	8,758.00	10,325.00	14,200.00	14,446.00	17,596.00	17,562.50	16,705.00	17,370.00
Bussey Institution,	6,500.00	6,500.00	6,227.40	6,422.51	5,400.00	6,400.00	6,400.00	7,050.00	6,950.00	7,450.00
Totals, Group 1,	427,733.45	448,628.44	453,506.28	490,077.15	517,073.40	547,738.40	567,939.44	599,279.29	613,619.90	622,709.17
Percentages,	.45	.48	.47	.44	.47	.49	.47	.47	.45	.45
<b>GROUP 2.</b>										
Univ., Coll., etc.,	71,746.70	68,877.87	68,782.14	70,009.32	72,043.67	75,824.16	78,472.85	84,005.54	93,013.09	93,599.13
Divinity School,	2,236.47	2,139.07	2,104.14	2,218.32	2,162.25	2,169.46	2,108.99	2,018.20	1,572.88	2,222.69
Law School,	1,950.00	1,650.00	2,700.00	2,350.00	2,600.00	3,000.00	2,600.00	3,750.00	3,100.00	4,550.00
Medical School,	2,792.50	3,655.00	3,140.00	3,532.00	3,959.75	4,598.18	4,894.03	4,932.50	7,822.98	7,602.98
Totals, Group 2,	78,695.67	76,321.94	76,726.28	78,109.64	80,765.67	85,091.80	88,075.87	94,706.24	105,508.95	107,974.80
Percentages,	.08	.08	.08	.07	.07	.08	.07	.07	.08	.08
<b>GROUP 3.</b>										
University Library,	50,286.87	45,944.72	48,139.12	106,082.40	58,463.77	54,791.08	60,510.19	70,197.85	67,647.86	67,914.16
Percentages,	.05	.05	.05	.10	.05	.05	.05	.05	.05	.06
<b>GROUP 4.</b>										
Museums, etc.,	46,804.98	46,463.39	50,406.36	68,091.29	56,024.75	53,287.23	67,177.43	60,685.83	68,506.80	70,727.81
Percentages,	.05	.05	.05	.06	.05	.05	.06	.05	.05	.06
<b>GROUP 5.</b>										
Univ., Coll., etc.,	42,081.99	35,727.06	33,742.47	49,300.85	47,837.10	33,303.34	55,984.10	71,565.01	44,471.49	56,948.33
Divinity School,	4,232.97	7,176.30	2,941.16	2,989.37	8,512.81	8,808.26	8,146.34	6,248.49	8,140.14	6,884.76



Law School,	6,137.85	6,018.76	4,335.55	7,380.21	23,754.23	7,102.75	4,468.10	4,587.37	9,614.52	4,260.79
Medical School,	12,434.13	15,060.24	17,382.81	18,274.73	17,311.42	17,070.34	14,573.25	14,628.83	15,837.16	15,898.70
Dental School,	2,209.58	1,764.19	6,395.65	2,870.15	4,526.36	2,844.66	2,695.98	2,298.33	2,677.05	3,189.32
Bussey Institution,	512.28	716.99	1,517.77	3,002.22	4,839.77	1,274.34	2,277.12	898.55	3,328.26	8,843.27
Totals, Group 5,	67,608.80	66,463.54	66,315.41	83,818.23	101,782.19	64,903.69	83,144.89	100,211.58	79,058.62	95,970.17
Percentages,	.07	.07	.07	.08	.09	.06	.07	.08	.06	.07

GROUP 6.

Univ., Coll., etc.,	136,093.80	132,066.30	147,057.30	161,404.80	170,382.35	186,987.79	184,850.42	210,863.73	267,591.74	252,875.98
Divinity School,	3,953.06	4,370.72	4,373.25	4,488.65	5,612.72	5,626.76	5,810.69	6,591.26	5,678.71	5,275.18
Law School,	18,333.84	16,513.29	14,351.92	18,684.79	20,520.72	18,538.59	22,010.00	25,122.26	26,896.69	23,103.49
Medical School,	20,417.98	21,217.02	22,031.80	25,933.74	21,805.44	23,460.58	44,941.97	38,164.50	37,392.24	38,861.02
Dental School,	4,180.53	4,222.80	5,447.92	7,233.40	9,482.73	8,112.55	7,694.06	7,205.84	8,886.20	9,928.91
Bussey Institution,	5,488.37	5,725.10	5,746.92	5,433.40	6,228.76	7,027.29	6,913.01	6,870.44	7,680.46	8,132.12
Totals, Group 6,	188,467.58	184,115.23	199,009.11	223,178.78	234,032.72	249,753.56	272,220.15	289,818.03	354,126.04	333,231.70
Percentages,	.20	.20	.21	.20	.21	.22	.23	.22	.26	.24

GROUP 7.

Observatory,	69,011.18	53,717.58	56,748.44	48,629.61	50,933.60	47,192.05	50,486.57	51,228.96	52,570.07	57,766.98
Arnold Arboretum,	21,819.58	16,529.38	13,709.26	12,410.53	10,529.72	14,225.40	11,576.63	21,399.04	19,261.83	23,116.23
Totals, Group 7,	90,830.76	70,246.96	70,457.70	61,040.14	61,463.32	61,417.45	62,063.20	72,628.00	71,831.90	80,883.21
Percentages,	.10	.07	.07	.05	.06	.05	.05	.06	.05	.06

TOTALS.

Univ., Coll., etc.,	634,736.24	632,720.13	652,787.65	783,065.85	747,984.06	762,343.16	814,161.16	889,604.72	947,525.14	960,581.26
Divinity School,	31,850.05	34,913.74	30,818.34	31,788.64	35,625.43	38,096.04	37,506.04	42,304.66	37,493.21	39,159.30
Law School,	61,671.69	59,732.05	56,487.47	65,636.00	84,335.45	70,273.62	79,506.10	84,437.95	89,208.83	79,749.27
Medical School,	106,461.61	115,202.26	119,915.44	133,529.62	135,519.44	144,748.10	164,319.50	156,625.53	168,014.02	164,074.36
Dental School,	12,277.11	12,326.99	20,601.57	20,428.55	28,209.59	25,403.21	27,986.04	27,066.67	28,268.25	30,488.23
Bussey Institution,	12,600.65	13,042.09	13,492.09	14,858.83	16,468.53	14,701.63	15,590.13	14,808.99	17,958.72	24,475.39
Oliver & Arnold Ar.	30,830.76	70,246.96	70,457.70	61,040.14	61,463.32	61,417.45	62,063.20	72,628.00	71,831.90	80,883.21
Totals, all groups,	950,428.11	938,184.22	964,560.26	1,110,347.63	1,109,605.82	1,116,983.21	1,201,131.17	1,287,476.82	1,360,300.07	1,379,411.02

exhibits the expenditure for each of the past ten years in each of the six groups into which the expenditures have been classified, and also the percentage of the expenditure in each group to the total expenditure. Two exceptional departments, in which no instruction is given, are placed by themselves in a separate group (7). The percentage expenditures by groups are remarkably steady from year to year. Thus, in ten years the percentage of expenditure on salaries for instruction in the department of Arts and Sciences has only varied between 42 and 48 per cent., and has averaged 45 per cent. It appears also in Table I that the percentages of expenditure for aids to students, the general library, the museums, and the maintenance of the public buildings, have been noticeably steady. The percentage of expenditure in the sixth group exhibits a rising tendency, which is doubtless due to administrative improvements, and more liberal expenditures on laboratories, grounds, and hospitalities. The percentage of expenditure on salaries for instruction in the department of Arts and Sciences is much lower than the corresponding percentages in the Divinity, Law, and Medical Schools. The reason is that the department of Arts and Sciences bears, in conformity with old custom, the cost of the university library, of the museums, of the business offices, and of the general administration of the University. On the other hand, the department of Arts and Sciences includes fully three-quarters of the students in the University, if four Summer School students may be counted as equivalent to one regular student.

A summary of the results contained in Table I is presented in Table II; and in this summary the steadiness of the percentages through ten years is even more noticeable than it is in Table I, as was, indeed, to be anticipated. The gradual rise through ten years of the total expenditures of the university under the heads selected is clearly exhibited in the final Table of Totals. The increase of expenditure in ten years is nearly 47 per cent. The increase in the number of students during the same years is 56 per cent. The highest percentages of expenditures for salaries for instruction occur in the Divinity School and the Medical School, the proportion of teachers to students being larger in those Faculties than in any other.

The experienced University administrator would naturally desire to raise the percentage expenditure for the first group at the expense of the sixth group; but he is compelled to admit that the expenditures under the sixth group are indispensable, and that in most universities some of them — publications for instance — need to be increased. A certain distrust is apt to exist between the humanities and the sciences concerning the relative expenditures for libraries on the one hand and museums or collections on the other, the humanities having most use for libraries and the sciences for museums. At Harvard University the percentage expenditures in these two groups (3 and 4) have been almost identical during the past ten years. The large expenditures for the laboratories of pure and applied science, however, are not balanced by the relatively small expenditures for the departmental libraries and reading-rooms which the humanities enjoy, and for the apparatus used in teaching history, economics, philosophy, and the fine arts.

This instructive analysis of the annual expenditures of the University has been made by the Comptroller, Mr. Allen Danforth, who has a thorough acquaintance with all the details of the University expenditure, and with the application of the income of all the funds and of the gifts for immediate use. No one else could have made it.

The salaries for instruction comprised in the first group of Table I above discussed include the salaries of all the teachers in Harvard College, the Lawrence Scientific School, and the Graduate School, for the reason that it is impossible to divide the body of teachers in the Arts and Sciences among these three departments. Most of these teachers have students from all three departments; and all of them have students from two of the three departments, — that is, from Harvard College and the Graduate School, Harvard College and the Scientific School, or the Scientific School and the Graduate School. In the libraries, laboratories, and museums, students of all three departments find themselves in close association. In consequence, it would now be quite impossible to construct a separate budget for any one of the three departments

administered by the Faculty of Arts and Sciences. In regard to receipts and expenses these three departments have inevitably been blended into one.

It remains to point out that the instruction offered by the Faculty of Arts and Sciences is utilized by the members of these three departments, and must be considered and administered as one group of courses. The most instructive document in the Annual Report of the President of the University is always the list of courses of instruction actually given by the Faculty of Arts and Sciences in the year to which the report relates (pp. 65-94). No one can understand the development of this instruction during the last twenty years, or the history of the elective system, without careful attention to all the details given in this list. Moreover, for a complete survey of all the instruction offered, the lists of three successive years should be examined; for there are in these lists many courses and half-courses that are given only once in two years, and some that are given only once in three years.

The list is always divided into four categories: (1) the courses and half-courses primarily for undergraduates, (2) those for undergraduates and graduates, (3) those primarily for graduates, and (4) the seminaries or courses of research. The following table exhibits the number of courses, half-courses, and seminaries by departments of instruction. It appears at once that the number of courses and half-courses intended for undergraduates and graduates together exceeds the number of those primarily for undergraduates, added to those primarily for graduates; and this fact indicates the general truth, that the instruction intended for all or any of the students under the care of the Faculty of Arts and Sciences constitutes by far the greater part of all the instruction the Faculty offers. It should be added that graduates are often found in courses intended primarily for undergraduates, and undergraduates in courses intended primarily for graduates. Indeed, even the seminaries and courses of research are resorted to by undergraduates; thus, in the year under review, one-sixth of the choices of seminaries, or research courses, were made by undergraduates, the whole number of seminary choices being 200. In the courses primarily for graduates, undergraduates predominate

DEPARTMENTS.	For Under-graduates.		For Graduates and Under-graduates.		For Graduates.		Seminaries and research courses.
	Whole courses.	Half courses.	Whole courses.	Half courses.	Whole courses.	Half courses.	
Semitic . . . . .	..	..	4	..	4	3	..
Indo-Iranian . . . . .	..	..	..	2	..	4	..
Greek . . . . .	5	2	3	2	3	5	} 1
Latin . . . . .	4	2	3	1	3	5	
English . . . . .	5	3	4	13	..	5	1
German (including Germanic Philology and Scandinavian) .	11	3	2	4	1	3	2
French (including Romance Philology) . .	6	3	5	..	4	..	1
Italian . . . . .	1	..	1	..	1	..	..
Spanish . . . . .	1	..	2	..	..	..	..
Comparative Literature	..	..	3	..	..	2	..
Celtic . . . . .	..	..	..	..	..	2	..
Slavic . . . . .	..	..	1	1	..	2	..
History . . . . .	1	..	9	6	2	1	} 8
Government . . . . .	1	..	1	2	2	..	
Economics . . . . .	1	..	6	10	1	1	1
History of Religions .	..	..	..	1	..	..	..
Philosophy . . . . .	2	..	6	5	..	1	7
Education . . . . .	..	..	1	1	1	2	1
Fine Arts . . . . .	2	..	2	..	1	..	..
Architecture (including Landscape Architecture) . . . . .	7	1	5	2	..	..	..
Music . . . . .	..	..	3	2	3	..	..
Mathematics . . . . .	4	4	4	5	6	1	..
Astronomy . . . . .	..	2	1	..	..	..	..
Engineering . . . . .	3	12	11	16	..	..	..
Physics . . . . .	2	1	3	3	..	..	2
Chemistry . . . . .	4	1	1	3	1	1	5
Botany . . . . .	..	2	2	1	..	..	2
Zoölogy . . . . .	..	2	2	6	..	..	1
Geology & Geography .	..	5	4	8	..	..	4
Mineralogy & Petrography . . . . .	1	1	1	2	..	..	1
Mining & Metallurgy .	..	..	3	9	..	..	1
Archaeology & Ethnology . . . . .	..	..	1	..	..	3	1
Anatomy, Physiology, & Hygiene . . . . .	1	..	..	2	..	..	..
<b>Total . . . . .</b>	<b>62</b>	<b>44</b>	<b>94</b>	<b>107</b>	<b>33</b>	<b>41</b>	<b>39</b>

in the departments of education, music, chemistry, and ethnology; undergraduates and graduates are in equal numbers in the departments of Slavic languages, economics, and fine arts; and graduates predominate in the language and literature departments, except Slavic, and in history, government, philosophy, and mathematics. Of the courses announced for undergraduates and graduates, the greater number are given to undergraduates with the addition of a small proportion of graduates; there are, however, twelve courses and twelve half-courses in which graduates preponderate, the departments to which these twenty-four courses belong being physics, mathematics, philosophy, government, history, Russian, comparative literature, German literature, English, Latin and Greek composition, Indo-Iranian, and Semitic. These courses are exceptional; they probably belong more properly under the head of primarily for graduates, — at least, the actual choices place them there. The term undergraduate, as here used, includes the College students and the Scientific School students. The College student appears through the entire range of instruction offered by the Faculty of Arts and Sciences, including the seminaries, all the courses in pure knowledge, and much of the instruction called technical. The technical courses include such subjects as economics, government, sociology, architecture, landscape architecture, astronomy, mechanical drawing, plane and geodetic surveying, shop-work, elementary statics, steam machinery, general metallurgy, microscopic anatomy, and hygiene. Subjects of this technical sort the College student shares with the Scientific student, and the Scientific student also chooses the elementary courses in languages and history. Except in scientific subjects the Scientific student, unlike the College student, does not resort to advanced courses. It is then quite impossible to distinguish Graduate School instruction from College instruction, or College from Graduate School, and, with the exception just noted concerning advanced courses, there is no clear demarcation between College courses and Scientific School courses.

There is, however, a certain body of instruction which nearly all College students, and the greater number of Scientific

students do, as a fact, seek,—the fundamental elementary courses in English, French, and German, history, government, economics, philosophy, and geology. These courses taken together make up about four-ninths of the total number of courses which a College student needs to take to procure the degree of Bachelor of Arts. The average student, therefore, if he has not brought with him to college a good knowledge of either French or German, has only five-ninths of his choices to spend elsewhere than in this general elementary group of courses. This is, of course, but a rough approximation to the real fact, because there is no such thing as an average student. Nevertheless it is plain that the manner in which those seven and a half large courses are given is a matter which deserves the very careful attention of the Faculty. Several experiments have been in progress during recent years; for the different departments do not treat these courses alike. In the languages a good small-section method has been worked out. In history and government a lecture method is used; but the class is also divided into eight sections, with one tutor or assistant for each pair of sections. In philosophy two parallel courses are given, three professors, one assistant professor and one assistant taking part in them, and the total number of students in the two courses being 427 in the year under review (p. 78). In economics three instructors and two assistants gave Economics 1 to 432 students. In Geology 4 one professor with two assistants gave the instruction to 451 students. Geology 4 is only a half-course. Here are five different methods in seven and a half courses. The lecture method has great merits for large classes. The outline of the subject is given by an experienced lecturer; and the personality of the lecturer tells strongly on the class. This outline is filled in by prescribed reading; and the assistants, who perhaps might better be called tutors, reinforce the instruction given by the professor, and come personally in contact with every student in the class. The effectiveness of the instruction might perhaps be promoted by employing a larger number of assistants, and dividing the class into a greater number of sections. In the year 1901–02 the average section in History 1 or Economics 1 numbered about fifty-four. The method adopted in

the department of philosophy brings more professors and fewer assistants into contact with the class. In Geology 4 there is less attempt to keep informed concerning the weekly progress of each student; nevertheless Geology 4 has been for many years a profitable course of instruction for large numbers of students. The Faculty has lately appointed a committee to consider, among other things, whether the methods of instruction in large elementary courses under the Faculty of Arts and Sciences can be improved. In the meantime it is certain that all five of the methods now in use have plain advantages, and that the Faculty has learned something from each one of these experiments. The methods used outside of the languages all bring into play the experienced and interesting lecturer, and the assistant or tutor following after him with more of personal insistence and suggestion addressed to each student. It is the professor who makes the lay-out of the course, and determines its character through his own attainments and scholarly interests. The student is, however, by no means a mere listener to lectures; he must be a reader also, and must give frequent account of the work he does.

It is interesting to inquire what has become of Harvard College during these remarkable developments of instruction. The prescribed curriculum of forty years ago is now represented by about one-quarter of the courses and half-courses intended primarily for undergraduates; but the sixty-one courses and forty-six half-courses in that category represent a much greater variety of subjects of instruction than appeared in the old curriculum. The Harvard College student, however, now ranges through the entire body of instruction offered by the Faculty of Arts and Sciences; that is, through 189 full courses, 192 half-courses and 39 seminaries or courses of research. He may be found in any of them, and he is actually found in all but a small proportion of them. As a place of instruction, therefore, Harvard College is not distinguishable from Harvard University in the department of Arts and Sciences. Under a wide elective system this result is inevitable. The strictly professional departments may be distinguished by their conditions of admission. They are clearly distinguished if a degree in letters or science is demanded



for admission; but if, as in most American universities, no Bachelor's degree, or no serious entrance examination is demanded for admission to the professional schools, it is not possible to say what is the real grade of instruction in the professional schools, or what is the real quality of the members of such professional schools as scholars or cultivated men. Thus, in the Harvard University of forty years ago many College students possessed a much higher degree of cultivation than many professional students; and at this day the same is true of some College students compared with some students in the Graduate School. As has already been pointed out, there are Graduate students who find it to their advantage to enter elementary courses, and there are College students who are able to enter the most advanced courses in Arts and Sciences. Therefore, there is no telling where the College ends and the Graduate School begins; they are inter-fused or commingled. The same is true of the College and the Scientific School, and of the Scientific School and the Graduate School, but in a less degree; because there are many advanced courses in the humanities which the Scientific student never attempts to enter; they would not advance him towards the definite ends he has in view.

Anyone who studies the successive lists of courses of instruction actually given in Arts and Sciences year after year will perceive that the lists increase gradually in extent, and that the offerings in every department develop in range and variety. The process is not uniform through all the departments, but is nevertheless similar. Each department studies for itself how to magnify and diversify its offerings; each takes account of its intellectual resources, and endeavors to utilize them to the utmost for new courses and half-courses. The chairmen of departments are changed every few years; and each new chairman tries to invent some improvement or enlargement, and to persuade his department to urge it, and the Corporation to yield to this urgency. Every department also studies the offerings of the corresponding department in other universities, and represents to the Corporation that such and such increases must be allowed, if the Harvard department

is to bear comparison with the same department in some other university. In other words, each department competes with other departments in the same Faculty, and also feels itself in competition with the same department in other universities. All the younger teachers seek to get control of advanced courses given for the benefit of a few students; and the older teachers tend to draw away from elementary courses. The theory is that the older and more experienced teachers should retain portions of the elementary instruction, and that the young teachers should have some share in the advanced instruction; but constant watchfulness is necessary to get these excellent theories carried out in practice. The whole process tends to the unnecessary multiplication of advanced courses for small numbers of students, such courses being as a rule more interesting for the teachers and less laborious. The correctives for this tendency are found in two plain facts of experience: first, that a department which does not maintain thoroughly good elementary courses will have difficulty in recruiting adequately its advanced courses; and, secondly, that a teacher who does not prove his value year after year to large elementary classes may find himself without a suitable audience in the advanced courses he especially likes to give.

The Faculty of Arts and Sciences, stimulated by the Board of Overseers, arrived during the year under review at a clear definition of the terms on which the degree of Bachelor of Arts may be taken in Harvard College. In order to be recommended for the degree of Bachelor of Arts a candidate must have passed in studies amounting to sixteen courses, together with such work in English as may be prescribed for him, making a total of 17 or  $17\frac{1}{2}$  courses as the case may be. He must, moreover, have attained a grade above *D* in at least two-thirds of all the work done by him in Harvard University in satisfaction of the requirements for the degree. A student who enters the Freshman Class without serious deficiency may complete the requisite number of courses in four, three and a half, or three years.

This statement is the result of discussions which began in 1887. On December 6, 1887, the Faculty of Harvard

College received from the Academic Council the following communication : —

“ *Voted*, That with a view to lower the average age at which Bachelors of Arts of Harvard College can enter the professional schools and the graduate department the College Faculty be requested to consider the expediency of a reduction of the College course.”

This action of the Council was due to the increasing difficulties caused by the prolongation of the period of professional education. The subject was first considered at some length by a large committee of the Faculty, and after November 12, 1889, the Faculty itself gave much time to it. On March 25, 1890, the Faculty sent the following communication to the President and Fellows : —

“ The Faculty desires to modify its present regulations in accordance with the following propositions : —

“ 1. That the requirements for the degree of Bachelor of Arts be expressed, under suitable regulations with regard to length of residence and distribution of work, in terms of courses of study satisfactorily accomplished.

“ 2. That the number of courses required for the degree be sixteen.

“ 3. That when a student enters College, there shall be placed to his credit, towards satisfying the foregoing requirement of sixteen courses, (1) any advanced studies on which he has passed in his admission examination beyond the number required for admission, and (2) any other College studies which he has anticipated.

“ 4. That a student may be recommended for the degree of Bachelor of Arts in the middle, as well as at the end, of the academic year.

“ In case the measures here proposed should be adopted, it is the purpose of the Faculty to encourage the anticipation of College studies by students at the time of their admission, and to facilitate the attainment of the degree of Bachelor of Arts in less than four years.

“ The Faculty further proposes to advise parents and teachers that eighteen years is a suitable age for entering Harvard College.”

The regular requirements for the degree of Bachelor of Arts were at that time 18.4 courses. It appearing to the Board of Overseers that the proposition of the Faculty distinctly reduced the requirements for the Harvard A.B., the proposal was rejected by that Board, the President of the University voting

alone in favor of it. After that arrest of action, certain votes were adopted by the Faculty which reduced the total number of courses required for the degree; but they were not adopted with any intention to facilitate the gaining of the A.B. in less than four years. These votes were as follows: In 1890 a required course of elementary lectures on physics which had counted 0.2 of a course was abolished; and in 1894 a similar course in chemistry was abolished. These two Faculty votes reduced the number of courses required for the A.B. to 18. In 1898 students who attained grade *A* or *B* in prescribed English *A* were exempted from the prescription of English *B* or *BC*; and the requirement for the degree of A.B. for such students was thereby reduced by a half-course. In 1899 prescribed English *C* (a half-course) was abolished; so that the requirement for the degree of A.B. became for all students not more than  $17\frac{1}{2}$  courses, and for some not more than 17. In 1899 also English *A* and English *B* were united to form a single full course prescribed for Freshmen, so that the course now called English *A* became the only prescribed English. In consequence of the reductions which have been made in prescribed English since 1894, the amount of prescribed English is now one course or one and one-half course, depending on the grade the Freshman obtains in English *A*. The student who obtains a grade higher than *D* in English *A* has no more required English; but the student who receives grade *D* is required to take in the ensuing year a half-course in English Composition in addition to his regular elective work.

The present regulations of the Faculty make it practicable for any student to complete 17 or  $17\frac{1}{2}$  courses in three years without undue exertion, and the standard of attainment, as expressed in grades, is precisely the same for students who obtain the degree in 3 years,  $3\frac{1}{2}$  years, or 4 years, this standard having been slightly raised by vote of the Faculty during the year now under review.

The Overseers having requested the Faculty in April, 1900, to make a plain statement for the Catalogue of the requirements for the degree of Bachelor of Arts—the existing statements being in their opinion confusing and obscure—the

Faculty accepted for publication in the Catalogue issued in December, 1901, a statement of the actual practice of the Faculty at that time, prepared by Mr. Richard Cobb, then Corresponding Secretary, and this statement being forwarded to the Board of Overseers, the Board passed on December 11, 1901, the following vote :—

“ The Overseers are gratified to find in the Catalogue a clearer statement of the requirements for the degree of Bachelor of Arts, and they await with interest and sympathy the report of the Faculty which will recognize in a more formal way the system by which students of unusual diligence or marked mental capacity may obtain the degree of Bachelor of Arts in three years.”

This vote encouraged the Faculty to pursue the subject ; so that last spring they abandoned the practice of requiring a candidate who accomplished the work for the degree in three years either to attain higher grades than were required of the candidate who took four years to complete the work, or to wait a year for his degree on leave of absence ; and they also raised a little the minimum attainment for the degree of A.B. as expressed in grades. A minority of the Faculty favored a greater raising of the standard expressed in grades.

It is obvious from this review that the three years' course for the degree of A.B. at Harvard College is intended to demand as much work and as high attainments as are demanded in the four years' course. The governing Boards and the Faculty have had no intention of permitting the requirements for the Harvard A.B. to be lowered, although they have made it possible for diligent students to attain the degree in three years, or three years and a half. This insistence on the sum of attainments for the degree is the characteristic feature of the whole evolution. Since the general effect of the elective system during the past thirty years has been greatly to raise the quality of the instruction throughout all the courses and half-courses offered by the Faculty of Arts and Sciences, it is obvious that the candidate who shall hereafter obtain the Harvard degree in three years will have to give, on the average, distinct evidences of higher scholarship than has been expected of his predecessors in any former generation.

To establish clearly this principle is worth the delay which has been experienced in bringing about this reform. From the financial point of view the delay has had one advantage: it has enabled the Corporation to adapt its budget to a progressive loss of College students in the Senior year. On the other hand the College has had to forego the advantage of the large accessions of Freshmen, which might have followed from the sudden, unguarded offer of an A.B. degree in three years.

The Faculty of Arts and Sciences has now done what it can to combat the great evil of too late entrance upon the professional careers or the business career. It has expressed its preference for the age of eighteen as the age for entering college, and its conviction that boys can be well prepared for college by that age, and it has made it possible for any diligent student to get the degree of Bachelor of Arts in three years. These two measures combined should enable parents to get their well-trained sons into the learned professions by twenty-four or twenty-five years of age, and into business careers much earlier. To effect these improvements, however, the coöperation of parents, schools, and the community at large is essential.

The foregoing narrative shows conclusively that Harvard University has no sympathy with any efforts to lower the standard of the degree of Bachelor of Arts, or to substitute for it an inferior degree. It proposes to uphold the standard of that degree by all appropriate legislation within its own walls, and by the effect of its admission examinations on the secondary schools; and it has already done all that a university can do to support the primary degrees in arts and science, by requiring such a degree for admission to its principal professional schools.

The different universities of the country are in very different positions in respect to the policy of requiring a degree in arts or science for admission to their professional schools. The table which follows brings out these differences for a few institutions.

PROPORTION IN NINE UNIVERSITIES OF LAW AND MEDICAL STUDENTS THAT HOLD A PRELIMINARY DEGREE TO ALL SUCH STUDENTS.\*

Universities.	Holders of a preliminary degree.	Whole number of Law and Medical students.	Per cent. of holders of a preliminary degree.
Harvard . . . . .	886	1134	78.1
Columbia . . . . .	562	1260	44.6
Pennsylvania . . . .	331	928	35.6
Northwestern . . . .	230	691	31.8
Michigan . . . . .	216	1367	15.8
Yale . . . . .	119	398	29.9
California . . . . .	118	268	44.
Chicago (Med.) . . .	100	325	30.7
Cornell . . . . .	75	607	12.3

In the higher education in America there is no more important question than this, — shall the professional schools of the universities continue to be open to uneducated persons or persons of very slight education, or shall they all require for admission a preliminary degree in arts or science? Private-venture schools with low requirements for admission, or none, might still continue to exist. The important question is, what should the universities do in this matter? Harvard University has definitely determined to pursue the policy of requiring for admission to its professional schools a preliminary degree, and has already applied this policy in all its professional schools except the Dental School. The result has been an improvement in its professional schools striking in proportion to the strength of the contrast between the former students and the present in regard to their previous training. Thus, in the Law School, which before this requirement was made had often had from 60 to 75 per cent. of college graduates in its classes, the improvement was of course less striking than in the Medical School, which sometimes had in its classes not more than 35 per cent. of college graduates. It is impossible to keep the level of instruction so high for a class which contains college graduates, high school graduates, and persons who can barely read and write, as for a class which consists exclusively of college graduates. Unless the American colleges are entirely deceived as

\* The figures are obtained from the catalogues of the several universities by counting names to which an academic degree, or its obvious equivalent, is affixed. The requirement of a preliminary degree, or its equivalent, for admission affected in 1901-02 all classes in the Harvard Law School, but only the first-year class in the Harvard Medical School.

to the value of a college course, it stands to reason that much better instruction can be given to a class composed exclusively of college graduates than to any class in which there are many persons of very inferior training. Since the wise and efficient conduct of American affairs, commercial, industrial, and public, depends more and more upon the learned and scientific professions, the universities owe it to the country to provide the best possible preparation for all the professions. This best possible preparation can only be given to young men who up to their twenty-first year have had the advantages of continuous and progressive school and college training.

Two objections may be urged against this policy: first, that the number of students in university professional schools would be diminished: this objection is but temporary, for when the requirement is once made, ambitious young men and their parents will find the means of meeting it. The pecuniary difficulty can be diminished by giving four years' notice of the adoption of the new policy, and by laying up money for a few years beforehand to offset the temporary reduction in tuition fees. Secondly, it may be objected that in our sparsely settled country, in large areas of which no good schools or colleges are to be found, young men of very remarkable capacity might be prevented from reaching the learned or scientific professions because of deficiencies in their early training, to the ultimate loss of the country. The answer to this objection is that geniuses always make their own way, in spite of any educational regulations made in the interests of the great majority of the population.

Whenever a new and higher standard of admission to an upper grade in education is set up, the studies and methods of all the lower grades are immediately affected. If the principal universities in the United States should now declare that in 1907 they should demand for admission to their professional schools a degree in arts or science, the first effect would be to increase the number of pupils in the secondary schools of the country. Prudent and forelooking parents would say to themselves, — we must send our boys to a good secondary school, and so get them later into a college or scientific school, for otherwise they will be cut off from all the learned professions.



A few years later the colleges and scientific schools would find their numbers increased for the same reason; and both these effects would be highly beneficent. The United States will lack this inducement to thorough secondary and college training for promising youth so long as the university schools for the learned professions are open to persons whose systematic education may have ceased when they were ten or twelve years old. It is in this way that universities can effectively support the preliminary degrees in arts and science.

The post-graduate organization of the successive Classes that are graduated from Harvard College has been considerably improved during the past thirty years. Each Class endeavors to select a competent and interested member to serve as Class secretary; and each Class subscribes a fund, the interest on which defrays the Class expenses in subsequent years. It has become the custom for the Class secretary to publish at intervals of three or five years a report which gives some account of all the members of the Class, and contains lists of deaths, marriages, and births to date. These Class reports taken together contain valuable vital statistics; for they describe the careers of thousands of educated men, and give their family records. They are not supposed to be perfectly accurate, and yet their mistakes and omissions are relatively few. The following table has been made up from returns by the secretaries of the six Classes named. It gives the number of surviving children of members of these six Classes from twenty-five to thirty years after graduation.

Class of	Number of A.B.'s	Number married	Number of children surviving (1902)
1872 . . . . .	114	82	165
1873 . . . . .	131	96	181
1874 . . . . .	165	124	247
1875 . . . . .	141	90	171
1876 . . . . .	142	106	212
1877 . . . . .	188	136	286
	881	634	1262

It is not probable that many more children will be born to these graduates, unless indeed a few may have married women much younger than themselves. If it be assumed that the sur-

viving children are about one-half males, it follows that these six Classes have by no means reproduced themselves; that they have, indeed, fallen 28 per cent. short of it. Twenty-eight per cent. of the members of these Classes are unmarried, and those who are married have on the average only two surviving children; so that the married pairs just reproduce themselves on the average. It is obvious from these figures that the entering classes of Harvard College and the Lawrence Scientific School to-day can be recruited from sons of Harvard graduates only in small degree. If the graduates of the six Classes named could send all their sons to Harvard College within the six years 1902-07 inclusive, they would only supply one hundred Freshmen a year, or possibly one-seventh of the total number who will enter. The table suggests further that the highly educated part of the American people does not increase the population at all, but on the contrary fails to reproduce itself. If many other colleges and universities publish Class reports analogous to the Harvard reports, a competent statistician might establish from the assembled reports some interesting and important conclusions. It is probable that the regrettable result indicated in the above table is due in part to the late postponement of marriage on the part of educated young men, a postponement which the protracted education now prescribed for men who enter the learned and scientific professions makes almost unavoidable. The young physician, lawyer, engineer, or architect is now fortunate if he marries at twenty-eight or twenty-nine: whereas he should have married at twenty-five or twenty-six. To make earlier marriage possible is one of the strong inducements for bringing to an end the school course at seventeen or eighteen, the college course at twenty or twenty-one, and the professional training at twenty-four or twenty-five.

In the fall of 1900 there were 605 students in the Medical School, and the Dean wrote in his report on the preceding year, "The present School building affords accommodations which are totally inadequate to the demands of the lecturers and the regular teachers in the laboratories. Additional space must be provided if even the work of the School is to be

carried on. At present scientific investigations and research-work of the teaching staff are almost at a standstill, all the available room being needed for the sole purpose of teaching students." A committee of the Faculty had been appointed June 9th, 1900, to study the needs of each of the departments of instruction and research as regards space, fittings, and furniture, and to consider plans for new buildings. This committee feeling the need of professional advice the Corporation authorized the employment of Messrs. Shepley, Rutan and Coolidge, Architects, and with the help of the Faculty Committee these gentlemen made sketches of five buildings, one for offices, lecture-rooms, and the Warren Museum, and four for laboratories with lecture-rooms attached. In the preparation of these plans, ideas contributed by Professors W. T. Porter and Charles S. Minot were useful. On January 5, 1901, Mr. Coolidge gave the Faculty a lantern-slide demonstration of the results of his studies. Messrs. Shepley, Rutan and Coolidge finally made a large perspective drawing showing the disposition of the five buildings and their architectural effect. These drawings were exhibited to the Corporation and Overseers and to the Medical Faculty, and to some other persons interested in the general project.

While the labors of the Committee of the Medical Faculty were in progress a possible site for new Medical School buildings had been secured for the University by a method suggested by Mr. Henry L. Higginson and carried into effect by Mr. Francis L. Higginson. On September 11, 1900, twenty gentlemen agreed to contribute severally sums which varied from ten thousand to fifty thousand dollars for the purchase of 1,128,824 square feet of land bounded in part on Huntington and Longwood Avenues and Francis and Vila Streets, Boston, for the purpose of enabling the President and Fellows of Harvard College to purchase the said land at cost, if they should desire so to do, at any time within fifty-seven months from the date of the agreement. This agreement was perfectly carried out, and the land was held at the disposition of the President and Fellows. The area of the land was more than twice as great as would be needed by the Medical School, and the project therefore contemplated the possible use of the rest

of the land for hospitals or similar institutions which could make profitable use of the laboratories of the Medical School, and in return supply facilities for clinical teaching. Failing such use of the balance of the land, it was to be disposed of in their own interest by the twenty gentlemen who had bought it.

The estimates of cost for the five buildings and the cost of the land needed to give them convenient and dignified surroundings together amounted to nearly \$2,000,000; and it was apparent that large sums of money must be raised before it would be possible to enter upon the execution of the project. In March, 1901, Dr. J. Collins Warren had an opportunity of submitting these plans and estimates to Mr. John Pierpont Morgan in New York City. Mr. Morgan subsequently went to Europe, but sent from London the following cable message to Dr. Warren:—

DR. J. C. WARREN, BOSTON:—

Referring our conversation and plans submitted I am prepared erect centre Pavilion and two buildings new Medical School, Harvard University. Said buildings to be known as and designated Memorial Halls in memoriam James Spencer Morgan, native of Massachusetts, formerly a merchant of Boston and at the time of his death a merchant of London, England. You can announce this.

JOHN PIERPONT MORGAN.

(LONDON, June 21, 1901.)

The estimated cost of the buildings referred to in Mr. Morgan's message was \$1,135,000. A new Committee\* of the Medical Faculty was appointed at once to advise the Corporation about the future needs of every department of the School, these needs to embrace research as well as instruction, and to provide for growth and expansion in both these directions. The architects in connection with this Committee resumed the study of their plans, and have continued those studies to this day.

When in the fall of 1901 the Corporation began seriously to consider the magnitude and scope of the new plans for the

\* This advisory committee consisted of Dr. J. Collins Warren, Chairman, Dean W. L. Richardson, and Drs. Bowditch, Wood, Shattuck, E. H. Smith, Whitney, Minot, Burrell, Ernst, Harrington, Pfaff, T. Smith, Dexter, and Mallory. Dr. Farrar Cobb was appointed Secretary. The principal departments of instruction and research were represented in it.

Medical School, they saw that the School could by no means live suitably in the five new buildings, were they already provided; that so great an increase in the plant and equipment of the School would involve a corresponding increase in running expenses, to meet which the School had no adequate resources. While the Corporation were hesitating what to do in view of Mr. Morgan's proposed great gift on the one hand, and the lack of endowment for carrying on the new plant on the other, it came to the knowledge of Dr. J. Collins Warren through Dr. William Bradley Coley of New York City that Mr. John D. Rockefeller was disposed to make a large gift to Harvard University for the promotion of medical instruction and research, but that Mr. Rockefeller desired first to understand what the whole project of the Medical School was, and to be assured that in the end the President and Fellows would be put in possession of funds enough to insure that the proposed new plant could be properly carried on and effectively utilized. Mr. Rockefeller having entrusted the inquiry on this subject to Mr. Starr J. Murphy, a lawyer of New York City, correspondence and interviews took place between Mr. Murphy and representatives of the Harvard Corporation and the Medical Faculty; and the President was ultimately called upon to give estimates of the annual expenditures of the Medical School transferred to the three buildings to be given by Mr. Morgan, and later similar estimates for the Medical School transferred to the five buildings contemplated in the plans laid before Mr. Morgan. The letter in which the latter estimates were presented will be found in the Appendix, p. 336. On the 19th of December Mr. Murphy presented to Mr. John D. Rockefeller, Jr., a careful report with the recommendation that Mr. Rockefeller give a certain sum of money in case it be decided to proceed with three buildings only, and a larger sum in case it be decided to provide five buildings. The next step was a critical one. Mr. John D. Rockefeller, Jr., and Mr. Murphy met the President of the University and Drs. Warren and Bowditch at Mr. Rockefeller's office in New York, and discussed in detail these questions: What would it cost to buy the land for the Medical School, erect the five proposed buildings, furnish the same, and provide an endowment adequate to

carry on the School suitably in the new premises? The answer to this question was \$4,950,000. The next question was, what sum is now in the hands of the President and Fellows available for the above purposes? The answer was \$3,185,000, including the \$1,135,000 pledged by Mr. Morgan. Mr. John D. Rockefeller, Jr., then stated that his father would give \$1,000,000 applicable to buildings or to endowment, or partly for each purpose, provided that the balance of \$765,000 were procured from other sources. The question arising as to the time to be allowed for raising this large sum of money, a date was finally fixed at the approaching Commencement. Drs. Warren and Bowditch had already secured contributions which amounted to \$310,000, but \$455,000 remained to be secured in a little over four months. The representatives of the University were, nevertheless, very glad to accept the pledge of Mr. Rockefeller on the terms stated. On the same day Mr. John D. Rockefeller, Jr., wrote two letters to President Eliot which stated clearly the terms of the agreement and his father's pledge (see Appendix, p. 342). Drs. Warren and Bowditch, who had thus far done the greater part of the work of direct solicitation for new endowments for the Medical School, re-doubled their exertions, and in three weeks were enabled to write the following letter to the President and Fellows:—

HARVARD MEDICAL SCHOOL,  
Boston, Mass., March 7, 1902.

TO THE PRESIDENT AND FELLOWS OF HARVARD COLLEGE:—

GENTLEMEN,— We take great pleasure in forwarding the enclosed letter just received from Mrs. C. P. Huntington offering \$250,000 for the erection of a building to be called, in memory of her late husband, the Collis P. Huntington Laboratory of Pathology and Bacteriology. This generous gift, taken in connection with previous subscriptions already reported, more than completes the sum of \$765,000 required to secure Mr. J. D. Rockefeller's gift of \$1,000,000 for the enlargement and endowment of the Harvard Medical School, and thus ensures the realization of our great project.

Congratulating the University on this successful result of our efforts, we remain,

Yours very respectfully,

J. COLLINS WARREN,  
H. P. BOWDITCH.

A list of the subscriptions received up to April 1, 1902, will be found in the Appendix, p. 344. The largest subscription came from Mrs. Collis P. Huntington of New York, who contributed the sum of \$250,000 for the construction of the Pathological and Bacteriological Laboratory. The letter in which she made this great gift is printed in the Appendix, p. 343. The project of the Medical Faculty had been brought to Mrs. Huntington's notice by Dr. Coley of New York City, and had been strongly recommended to her by her legal adviser, Mr. Charles H. Tweed.

The execution of the whole undertaking was now assured, but much study of the building plans remained to be done. The prices of building materials and labor had risen, and in some respects the plans already made were extravagant or ill-proportioned; moreover, much depended upon the question whether hospitals were or were not to occupy the sixteen acres of land which the Medical School did not need. The negotiations with several bodies of hospital trustees were necessarily slow, and the most important body of trustees was hardly ready to take definite action. It has now (1 Jan. 1903) been decided that the sixteen acres will be occupied by hospitals; and the building plans which have been studied and re-studied in every detail are now in such condition that tenders of contract can soon be obtained. The delays have been serviceable to the undertaking as a whole, and the result should be a perfect establishment for the promotion of medical education and research on a large scale.

Seventeen members were added to the Faculty of Arts and Sciences through appointments made in the year 1901-02. There were many promotions as well as many new appointments during the year. The following table shows how the additions were distributed through the different grades of appointments. This gain, together with the gain in the number of annual appointments in the departments under the control of the Faculty of Arts and Sciences, caused an increase of over \$40,000 in the salary list of the current year for Arts and Sciences. In consequence, the percentage of expenditure on salaries for instruction in this Faculty ought

to rise during the current year to the highest percentage of the ten years past, unless some unexpected expenditures on buildings or their maintenance shall become necessary.

	1901-02	1902-03
Professors . . . . .	56	61
Associate Professors . . . . .	2	3
Assistant Professors . . . . .	29	35
Instructors . . . . .	26	30
Lecturer . . . . .	..	1
Recorder . . . . .	1	1
	<hr/>	<hr/>
	114	131

The retirement of Professor Smith from the Deanship of the Faculty of Arts and Sciences and the transfer of Professor Briggs from one deanship to another gave occasion for several administrative changes. Assistant Professor Byron Satterlee Hurlbut, who had been Recording Secretary of the Faculty of Arts and Sciences, and Secretary of the Appointment Committee, was made Dean of Harvard College. Mr. Richard Cobb, Corresponding Secretary and Instructor in English, was made Chairman of the Appointment Committee, and given charge of its work; and Mr. John Goddard Hart was made Secretary of the Faculty of Arts and Sciences and Chairman of the Committee on Special Students. The Recorder, Mr. G. W. Cram, is also Chairman of the Committee on Admission from other Colleges. The deanship of the Faculty of Arts and Sciences, and the entire administration of Harvard College are now in the hands of a group of comparatively young men who have grown up in the service and are devoted to it. It happens that four of them are connected with the English Department.

Dean Briggs's discussion of the new admission requirements to Harvard College (pp. 95-98) is highly interesting and suggestive, as is also his discussion of the requirements for the degree of Bachelor of Arts (pp. 101, 102). Dean Hurlbut also discusses the change in the requirements for the degree of Bachelor of Arts, and the new rules for promotion from one Class to another within the College (pp. 115-119). He points out too (p. 119) the importance of the administrative changes



which were brought about in 1890 when the Faculty of Arts and Sciences was first constituted.

It is a source of genuine satisfaction that the increase in the requirements for admission to the Scientific School has not thus far diminished the resort of students to the School. The progressive raising of the standard of admission will be completed in June, 1903; and it is to be hoped that the secondary schools which send pupils to the Scientific School will then have a long period of unchanging requirements for admission to this undergraduate scientific department of the University. Thereafter for the first time in this country a good scientific school will be put on the same level with a good college in respect to the amount of time and labor required for preparation for admission. Thus far it has been the universal practice to admit to scientific or technological schools on much easier terms than to colleges. Hence the lower repute of scientific schools and the smaller value attached to their degrees by the general public. The Dean of the School makes some interesting remarks (p. 122) about the function of the Course in General Science. During the year under review the School began to enjoy its new buildings, namely, — Pierce Hall for engineering, the southwest corner of the University Museum for geology, the new wing of the Rotch Laboratory for mining, and Nelson Robinson Jr. Hall for architecture and landscape architecture. These buildings are all well adapted to their uses, and are a very great acquisition both for the Scientific School and the University. Their combined cost was nearly \$600,000.

Following the report on the Lawrence Scientific School is the report of the Chairman of the Committee on the Regulation of Athletic Sports, which is embodied in the President's Report for the first time (p. 126). This report is interesting from several points of view. It exhibits, in the first place, the large number of students who are actively engaged in the competitive sports taken together. The figures given are not accurate, but it is reasonable to suppose that at least two thousand students out of the thirty-five hundred in Cambridge take

some active part in one or more of the thirteen sports in which an enumeration of the number of participants was made. A second table in this report demonstrates that the receipts of gate-money have nearly doubled in eight years, while the expenditures have increased only about 50 per cent. There are also tables which exhibit the expenditures for six years in each one of the following sports—foot-ball, base-ball, rowing, and track athletics. The Chairman calls attention to the fact that the expenditures for foot-ball are steadily increasing. A quarter part of all who take part in this sport are injured enough to lay them up for ten days on the average, and a much larger proportion of those who really play the game for the season are thus injured. The changes in the rules during the past ten years have tended to increase the number of injuries, rather than to diminish it. The temporary injuries are so numerous, that it is impossible to count on putting any particular eleven men into an important game on a given day. In order to provide the necessary number of substitutes for each place, the foot-ball squad often numbers sixty men. Hence large expenditures. The outfit for candidates grows more expensive, because they wear about fourteen pounds' weight of padding and armor. On the whole the game, under the existing rules, tends to become slower and less visible in its details, and therefore less interesting. Moreover, the ethics of the game, which are the imperfect ethics of war, do not improve. The martial axiom—attack the enemy's weakest point—inevitably leads to the deliberate onslaught on the cripple or the convalescent in the opposing line; and the habitual violation of rules, if penalties be escaped, is regarded by many as merely amusing. The Chairman's discussion of eligibility rules will be found interesting, if also somewhat discouraging. It is a cheerful feature of the report that a larger proportion of the gate-money than formerly has lately been used for the permanent improvement of the playgrounds. To drain and grade the large surface of the Longfellow marsh will be a work of time, and will call every year for the expenditure of a considerable sum of money.

Of all the competitive games in which the students are interested, foot-ball is the only one against which any serious

objections can be raised ; but there is increasing objection to the great exaggeration of all athletic sports. There is now a series of competitive games which covers the entire academic year ; and the distraction of large bodies of students from the proper work of a university grows more intense and continuous year after year. This unreasonable exaggeration of sport and exercise has become a serious drawback also in secondary schools. Thus, many of the schools fortunately situated in the country permit their pupils to be diverted almost entirely from the study of natural history by their devotion to a series of competitive sports which covers the entire school year. In the College and the Scientific School the afternoons of many students during far the greater part of the year are devoted to play, or to looking at the games which the most expert athletes are playing. The range of elective selection among the studies of the College is seriously limited, because of the desire of students, and therefore of teachers, to avoid appointments in the afternoons. Such are some of the evils which attend the prevailing exaggeration of athletic sports ; but whenever the evils consequent upon this exaggeration are mentioned, it should also be mentioned that the outdoor sports on the average and in the mass do more good than harm ; for they promote vigorous physical development, and provide invaluable safeguards against effeminacy and vice.

One of the most instructive tables in the report of the Dean of the Graduate School is the table of colleges and universities which sent students to the School in 1901-02, with a statement of the degrees these students brought from the various institutions. The two degrees which are brought in considerable numbers are the A.B. and the A.M., the A.B.'s being 294 and the A.M.'s 148 for 315 persons. Of course in many cases one person brought more than one degree. The degree of Bachelor of Science has, however, been presented during the last three years by a somewhat larger percentage than formerly. The percentage of Graduate School students born in New England has been declining. In 1895-96 it was 44 per cent. ; in 1901-02 it was 34 per cent. Table 15 in the Dean's report gives as usual the number of applicants

for fellowships and scholarships, the number of appointments, and the number of applicants who were not at the University in the year following their applications. Nearly half of the applicants, obtaining no aid, failed to appear at the University the subsequent year. Near the close of this report the Dean advocates the erection of a graduates' quadrangle or hall which should provide a sufficient number of chambers and studies for two or three hundred students and their instructors, with a large common room, reading rooms, a dining hall, and other apartments for the use of societies or clubs. Such a quadrangle would doubtless increase very much the attractiveness and usefulness of the Graduate School.

In the report of the Dean of the Divinity School (p. 172) it is pointed out anew how soon any good department of a university will recover from the shrinking effects of higher requirements either for admission to the department or within it. There is no more encouraging fact concerning American education than this. Nevertheless, the Divinity School is in the difficult position of being the only school for training ministers which actually collects a full tuition-fee, such as is demanded in professional schools of law, medicine, engineering, or architecture. It is confronted by the competition of schools which regard education for the ministry as a form of public charity. The remarks of the Dean on the administration of aids for students in the principal Protestant seminaries of this country will be found instructive. It is the opinion of the Divinity Faculty that its policy as regards the tuition-fee and the administration of scholarships has commended the profession of the ministry to young men of independent spirit, has led to excellent intellectual results within the School itself, and has procured for the School the complete respect of the other departments of the University. The attention of the Overseers is invited to those paragraphs in the Dean's report relating to the Summer School in Theology. This School demonstrates that at the present day theological instruction can be given by teachers drawn from many denominations which will be thoroughly acceptable and useful to students also drawn from many denominations. It will be noticed

that the students coming from Evangelical denominations have always greatly outnumbered the Unitarian and Universalist students.

The Parkman Professorship of Theology [1814] was filled on the 28th of October, 1901, by the election of Edward Caldwell Moore. The Professorship had been vacant since 1886, the last incumbent having been Professor Francis Greenwood Peabody, who was in that year transferred from the Parkman Professorship to the Plummer Professorship of Christian Morals. The Divinity Faculty lost at the end of the academic year 1900-01 Professor Joseph Henry Thayer. The election of Professor Edward Caldwell Moore kept the number of the Faculty good, although Professor Moore's department of theological study is different from that of Professor Thayer. The present Faculty of Divinity is, in respect to variety of scholarship and of instruction offered, the amplest the School has ever possessed. Professor Moore's election was completed by the consent of the Board of Overseers on December 11th, but he did not enter on the work of his professorship till the opening of the current academic year, in accordance with a previous understanding with the Corporation.

The first table in the report of the Dean of the Law School (p. 181) demonstrates an interesting fact connected with the requirement of a degree in arts or science for admission to a professional school. Thirty years ago the number of colleges represented among the students of the Law School was twenty-five. In the year under review it was ninety-two, the increase in the number of colleges represented having very nearly kept pace with the increase in the number of students. The fact speaks well for the School and for the colleges. Ninety-nine per cent. of the law students are now graduates in arts or science at entrance, as the Dean points out (p. 184). This fact, with others of like nature in the other professional schools, suggests that a more characteristic name ought now to be found for the department called the Graduate School.

During the spring and summer of the year under review, plans and estimates for a large addition to Austin Hall were

completed, and tenders of contract were made; but the cost of the proposed building proved to be so high that the Corporation and the Law Faculty agreed that it was expedient to postpone the erection of the building. In order to provide for the large accessions which are constantly coming to the Law Library, the Corporation assigned to the use of the Law School the northern wing (except the basement) of the building formerly occupied by the Lawrence Scientific School. On the completion of Pierce Hall this building was abandoned by the Engineering Department, and was therefore available for new uses. There is room in the northern wing to store the overflow of the Law School Library for, perhaps, four years. Meantime the annual surpluses of the School can be accumulated to cover the extra cost of the new building.

At the request of the University of Chicago and of Professor Beale, the Corporation gave Professor Beale leave of absence during half of the academic year 1902-03, and the whole of the academic year 1903-04, in order that he might organize, and develop during its first two years, a law school in the University of Chicago similar to the Harvard Law School in methods and aims. This original and instructive method of establishing a new law school is now being successfully carried out. It is a striking instance of effective coöperation by two universities. The older university thus puts all its experience in carrying on a law school at the service of the younger university, and lends a valued professor to serve as organizer and temporary administrator of the new school. It is evident that the common commercial motives have not governed this transaction.

The Faculty of Medicine voted in June last that beginning with the class entering the Medical School in the fall of 1902, the fourth year shall be elective without any restriction. This important change was adopted after a thorough study of the subject by two committees of the Faculty, a study which began early in the year 1901 (p. 185). It will be observed in the report of the Dean of the Medical School that the departments of physiology, histology and embryology, bacteriology, pathology, comparative pathology, and surgery have all been very active in medical and surgical research.

In the year 1900-01 the first or entering class of the Medical School numbered 198, according to the Catalogue published in December. In the Catalogue for the ensuing year, 1901-02, the first class numbered 87. The first class numbers in the Catalogue of the current year 89. The total number of new entries, however, during the current year is 83, whereas the total number of new entries in the year 1901-02 was 67. The year 1900 was the last year in which young men could enter the School without possessing a degree in arts or science, and on this account the entering class of that year was abnormally large. By the time four successive classes have entered under the new requirement, it is probable that the total number of students will be reduced from 600 in October, 1900, to about 400 in October, 1904; so that the School will probably enter upon the enjoyment of its new buildings with a body of students not much exceeding 400 in number; they will, however, be picked men, capable of profiting in the highest degree by the enlarged facilities of the School. All the teachers in the Medical School, who have been brought into intimate contact with the classes that have entered under the new requirement, agree that the improvement in the quality of these classes completely justifies the action of the Faculty in demanding a degree in arts or science for admission.

The other important experiment which has been going on in the Medical School is proceeding favorably, namely, — the reduction in the number of subjects pursued simultaneously by the individual student, and the increase in the amount of time devoted to each subject while it is pursued. This system, which may be described as the block system, was first applied to the class which entered in 1899; so that three classes have already been subjected to it. The class which entered in 1900, for the reason already mentioned, was not in its first year a class on which experiments in education could be advantageously tried. When the class which entered in 1899 shall have graduated, it will be possible to make an instructive report on the results of the block experiment.

The Faculty of Medicine, by advice of the Administrative Board of the Dental School, took important action during the

year under review providing for raising the entrance requirements for the Dental School to the same standard as that for entrance to Harvard College and the Lawrence Scientific School. Several years will be needed before this object can be fully accomplished. The new requirement will begin to take effect in June, 1904.

The Dental School had a deficit of \$5,345.53 in 1901-02 instead of the habitual surplus of preceding years. This deficit was in part due to a reduction in the number of students, and in part to a reduction of fees at the infirmary. It emphasizes the fact that the School needs and deserves an endowment. It has succeeded in contributing largely to improve the education of dentists, and it also does every year a very large amount of charitable work for thousands of patients in its infirmary and laboratory (pp. 209-211). The School has no building of its own, and its entire endowment now amounts to \$77,152.68.

The Bussey Institution rebuilt its greenhouses during the year under review, and is now in possession of durable houses convenient for the teachers and students of horticulture. Had it not been for this unusual outlay the Institution would have had a surplus. As it was the deficit was but small. Some of its land and buildings are used for the horses employed by the State Board of Health in the manufacture of diphtheria anti-toxin under the direction of Professor Theobald Smith, who lives at the Bussey mansion-house, and has his laboratory in the Stone Building. This is a utilization of the resources of the Institution in the service of the State. The Dean of the School points out that a separate fire-proof building for the valuable library which has been collected during the past thirty years is "of the nature of a necessity" (p. 213).

The Librarian makes a full report on the needs of the Library as formulated by the Committee appointed by the Corporation on December 31, 1901, to study that subject. The Committee arrived at the conclusion that a building which would fairly meet these needs would cost not less than \$750,000. There would also be great need of an endowment to meet the larger cost of administration and service in the larger building. The



Committee proposed no specific plans for the new building, and made no recommendation as to the relative advantages of enlarging the present building or beginning anew. The accessions of the year to the library in Gore Hall were 14,017, beside 17,679 pamphlets. The Librarian mentions that the Library has doubled in size since 1881, and quadrupled since 1861, and he adds (p. 219): "It is evident that at some point the present policy of maintaining intact the accumulations of a large library must be modified." The President of the University coincides with this opinion, and thinks that this modification of traditional policy should be determined before the plans of a new or enlarged building for the University Library can be intelligently considered. The Librarian's report gives some evidence of a decrease in the use of Gore Hall books in several directions, but the decline is not serious. The Library of Congress is doing a great service to all other libraries in the country by furnishing on request its own printed catalogue cards for use in the catalogues of other libraries. The College Library avails itself of these cards, and thereby makes a large saving (p. 234). The work of the Library of Congress is perfectly carried out, and will doubtless be of greater and greater service throughout the country.

The Curator of the Gray Herbarium points out the rapid growth of the collection and of the library which is an indispensable accessory. The present building has served its purpose well for nearly forty years, but is now entirely out-grown. A more spacious and thoroughly fire-proof herbarium building is urgently needed. It might advantageously make part of a building devoted entirely to the uses of the Botanical Department; and such a building would be conveniently placed near the University Museum. In the announcement of the courses for the year now current, made by the Faculty of Arts and Sciences in the spring of 1902, two courses in systematic botany were included for the first time, one to be given by Mr. Fernald on the Classification of Flowering Plants, with special reference to the flora of New England and the Maritime Provinces of Canada, the other a research course on the Taxonomy of Phanerogams by Professor Robinson.

Several decided improvements were made at the Botanic Garden during the year, as set forth in the report of the Director (p. 242). Both the Garden and the Botanical Museum afford numerous opportunities for persons who are disposed to give money in small sums or large for the promotion of botanical science, or for the exhibition of living specimens, or of botanical materials used in the arts and trades. The Director makes special reference to the constant help which the Botanical Department received from the late Hollis H. Hunnewell, of Wellesley, who was throughout his long life one of the most generous benefactors of the University, and especially of the Department of Botany, in which his own tastes and horticultural enterprises led him to take a peculiar interest.

The Ware collection of Blaschka models of flowers in glass continues to excite the wonder and admiration of all visitors to the University, both American and foreign, both those who have some acquaintance with botany and those who have not. It is a unique exhibition of artistic handiwork, marvellously accurate, delicate, and beautiful.

At the Arnold Arboretum the collection of North American woods presented to the Arboretum nine years ago by Mr. Morris K. Jesup has been arranged in suitable glass cases, and is now properly displayed and labelled as described by the Director (p. 248). Mr. Jesup was good enough to supply the glass cases needed for this important collection. The labels give in a condensed form much useful information. Professor Sargent has published two supplementary volumes of his monumental *Silva of North America*. The first volume of the series appeared in October, 1890, and the last of the fourteen in December, 1902. With characteristic vigor the Director has now begun the publication of a new series on *Trees and Shrubs*, which is intended chiefly to make known the new or rare plants of the Arboretum, and other undescribed woody plants from different parts of the world. Sixty-eight givers contributed \$44,760 to the permanent fund of the Arnold Arboretum during the year 1901-02, and the total endowment of the Arboretum amounted on the 31st of July, 1902, to \$312,755.69. As the Director has repeatedly testified, the endowment of the Arboretum is wholly inadequate. It has been

able to do the great work which has been done on its large estate, first, because the City of Boston has constructed all the driveways and gravel paths and graded the contiguous slopes ; and secondly, because large annual gifts for immediate expenditure have been made by friends interested in the prosecution of the work. Since the care, improvement, and renewal of the collections of living specimens, and the introduction of newly-discovered plants require constant large expenditures, the present endowment of the Arboretum ought to be trebled.

The laboratories of Boylston Hall proved too small to accommodate the 654 students who wished to study chemistry in the year 1901-02. At the opening of the second half of the year there were still fifteen men who had as yet been able to do no laboratory work, seven of whom were students of the Lawrence Scientific School for whom chemistry was a prescribed study.

The laboratories having proved inadequate for several years, the Corporation, as a temporary expedient, caused to be erected on the south side of the Hall a low one-story building, which furnishes desks for two divisions of one hundred and thirty men each. The cost of the building with its equipment was only about \$8,000 ; but it has proved to be the most comfortable of the elementary laboratories. It is used at present only in the afternoons. This structure must be regarded as a mere temporary device, until the Division of Chemistry can be provided with new quarters, ample in size, and fitted with all the best appliances for giving chemical instruction and carrying on chemical research.

For work on gases, Professor Richards needed another room in which mechanical power could be used. A good room was offered to him in Pierce Hall, where all the needed facilities were at hand ; but Professor Richards, and the Division of Chemistry, thought it better for him to remain in Boylston Hall. An additional room in the southeast corner of the basement of the Hall was therefore fitted up for him. Fifteen papers were issued from the Laboratory during the year, for twelve of which Professor Richards was responsible.

Since Boylston Hall is now utilized to the utmost, and is incapable of convenient enlargement on its present site, it is

clear that a new building is needed to provide adequate accommodations for the Division of Chemistry.

The Director of the Jefferson Physical Laboratory tells how the cost of power in the machine shop was reduced one-half by cutting the main shaft in two, and running the halves by separate motors. The shafting had been consuming too much power. The number of students electing the courses in physics has increased of late years — a very welcome phenomenon. The Thomas Jefferson Coolidge fund for original research has given a great impetus to advanced studies in the laboratory.

A report from the Division of Engineering appears for the first time in the President's Report (p. 257). The Chairman of the Division, Professor Hollis, points out that the enrolment in this Division greatly exceeds the enrolment in the other Divisions which have laboratory courses, and that the number of courses offered is also greater. He shows too that the average number of students per course is higher in the Division of Engineering than in any other of the laboratory Divisions except chemistry, where the very large number of students in Chemistry 1 gives the Division of Chemistry first place in this respect. Finally, he demonstrates that the average number of students per teacher in the Division of Engineering is much larger than in any of the other four Divisions. The inference from these facts is that the Division of Engineering is undermanned; so that each instructor has on the average too many students in his course. Several new appointments in the Division were made in the year under review to take effect at the opening of the current year, — among them the appointment of a full professor of electrical engineering. Professor Hollis also compares the number of enrolments with the number of courses in the fourteen Divisions of the Faculty of Arts and Sciences (p. 258), and brings out the great inequalities which exist among the Divisions in this respect. It should be observed that a Division which offers many advanced courses and relatively few elementary courses appears to disadvantage in this table. Professor Hollis makes some interest-

ing remarks on the present needs of engineering at Harvard, and on the impossibility of drawing a line between pure and applied science. He maintains that no university can in these days limit its field of work to subjects which are ordinarily classified as pure, and that no technical school can succeed if it gives nothing but courses in applied science.

The instruction in surveying and railroad engineering, which must be taken by students of engineering, is now given altogether in the summer, but is required of the students just as much as any of the instruction given in term time. After a five years' experiment, beginning in 1895 on the estate of Professor Shaler at Martha's Vineyard, the University acquired, through the generosity of Mr. Francis L. Higginson, an establishment of its own for this summer teaching. The Engineering Camp is situated at the eastern end of Squam Lake in New Hampshire, on an estate comprising nearly three hundred acres, and having a frontage on the lake of nearly two miles. The shore is mostly wooded; but large portions of the tract are open, and the general surface is irregular and rough. It is a territory very well adapted for field-teaching of the elements of surveying and earth-work. Four wooden buildings have been erected near the lake, which provide living rooms and drafting rooms, a dormitory, a kitchen, a dining room, and servants' quarters. A grove near by affords room for tents, many students preferring tents to the dormitory. Most of the tents are 12'×15' in area, and are provided with wooden floors. Such a tent accommodates four students. In summer the camp is reached by a launch from Ashland, across the lake; and Mr. George W. Weld of Boston last summer gave the camp an excellent launch, suitable for the transportation of both freight and passengers. The camp may also be reached from Centre Harbor by road. The programme of study comprises six weeks of land surveying, two weeks of geodetic surveying (with night work), and three weeks of railroad surveying; so that the camp is open for eleven weeks. Students divide themselves into working parties of four, each party acting under the direction of one of its members as chief. An assistant has charge of three of these parties. The camp is aroused at 6 A.M., and the working day begins at 7 A.M.

Luncheon is eaten wherever the parties happen to be at work. The working day ends at four ; and dinner is served at 5 P.M. Each party makes a report at the end of the day, which enables the instructor, in conference with his assistants, to determine each party's programme for the following day. Every student must have his own field book ; and each party must make a complete set of notes for the survey entrusted to them. Each member of a party serves in turn as head of the party. All the maps of each survey are plotted to the same scale ; and the assistants determine the accuracy of the plotting.

This active, open-air life, combined with an intellectual occupation, has proved enjoyable and useful ; so that the camp has already justified the very reasonable expenditures which have been made upon it. The University provides the instruction and the whole outfit ; and the students pay for their own board and lodging, the charges for which have thus far not exceeded a dollar a day. In the summer of 1902, 92 students lived at the camp, about half of whom were undergraduates of Harvard College. This mode of life has seemed to the University teachers who have conducted the camp, or watched its development, so wholesome and profitable, that the suggestion has been made to extend the use of this fine estate to other departments of the Scientific School, as, for instance, to the Department of Mathematics. Between the 18th of June and the 3d of September a great deal of instruction in the elementary mathematics, which underlie the proper engineering studies, might be given at Squam Lake under very healthy conditions, provided that a suitable outdoor occupation for four or five hours a day could be invented for the students. Such an occupation, analogous to the outdoor work of the students of surveying, would obviously be necessary.

The expenditure upon the Squam Lake estate has thus far been very moderate. In 1900-01 Mr. Francis L. Higginson gave \$10,000 for the purchase of the land and the construction of the camp ; and Mr. James J. Higginson gave \$200. In 1901-02 an anonymous contributor gave \$700, and Mr. James J. Higginson \$100. In 1901-02 the Corporation spent \$1550 for instruments to be used at the camp, but in the same year received \$854.90 more than they expended for the running expenses of the camp.

The Psychological Laboratory has gained what it is hoped will prove a permanent method of publication through the *Psychological Review*. The first volume of the "Harvard Psychological Studies," containing nearly 700 pages, will be issued shortly. There are sixteen papers in this volume which group themselves as studies in perception, memory, aesthetic feeling, and animal psychology. The subjects of the papers in animal psychology are especially interesting, namely, "Psychological Processes of the Frog," and "The Formation of Habit in Crayfish." The Director of the Laboratory and all its students feel strongly the pressing need of larger quarters, such as the new Hall planned for the Department of Philosophy would provide.

The Director of the Observatory describes briefly the policy he has pursued ever since he was appointed Director in 1876, —the policy of endeavoring to obtain the largest possible scientific outcome from the available income. This policy has required the undertaking of large pieces of routine work, and renders it necessary that the observers and computers shall continue for years upon work of the same character. The establishment of the Peruvian Station at Arequipa gave wider application to this policy; for it then became possible to study the entire sky instead of those stars only which are visible in Cambridge. Good examples of these large pieces of routine work are the Draper Catalogue which describes and classifies the spectra of 10,000 stars, the 30,000 measurements of the variables in  $\omega$  Centauri, the Meridian Circle zones  $+50^\circ$  to  $+55^\circ$  and  $-10^\circ$  to  $-14^\circ$ , each of which contains about 8,000 stars, and the work of the Meridian Photometer with which more than a million measurements have been made. This field of work has been occupied without interfering in any way with the work of other astronomers. The results have been appreciated by the friends of astronomical science; for the income of the Observatory has increased within the same period from less than \$20,000 a year to \$50,000, and in consequence the number of assistants has increased from six to forty. Nevertheless, the Observatory has many needs, such as new fire-proof buildings, funds for publication, and money

for the construction of new instruments of proved efficiency. An anonymous gift of \$20,000 made in 1901-02 has enabled the Director to add a fire-proof wing to the building which contains the invaluable collection of photographs of the sky. This addition will provide for the growth of the collection for the next ten or fifteen years. With the exception of this fire-proof storehouse the buildings of the Observatory, which are of wood, are old, overcrowded within, and in too close proximity without. The grounds of the Observatory are spacious and handsome, and the Director hopes that persons who wish to erect memorial buildings on University grounds where buildings last, may select the Observatory grounds for this purpose.

The Keeper of the Museum of Comparative Zoölogy reports the entrance of the Department of Geology on the enjoyment of the new geological section of the Museum during the second half of the year 1901-02. This Department vacated rooms in the zoölogical section of the Museum, and hence it became possible to enlarge very much the accommodations of the Department of Zoölogy in the northwestern corner-piece of the Museum. The library of the Museum increases in a truly formidable manner, although its accessions are confined strictly to natural history subjects. The Keeper of the Museum accompanied Mr. Agassiz on his expedition to the Maldivé Islands in the Indian Ocean, where the coral formations were studied in every possible way — by soundings, photographs, surface-towing, bottom-dredging, and shore-collecting. The publications of the Museum during the year were more numerous than usual.

Professor Mark, Director of the Zoölogical Laboratory, reports (p. 280) the number of students in the various classes of Harvard College, the Scientific School, and other departments of the University, who attended courses in zoölogy during the year under review, and also the number of students of Radcliffe College who received instruction in zoölogy. It must be confessed that the number is small, considering that in that year there were 2,844 students under the Faculty of Arts and Sciences and 451 students in Radcliffe College, and that nearly one-half of all the enrolments were in the elementary



course called Zoölogy 1. The small resort to the courses in zoölogy is due to the fact that the subject is as yet supposed to have but few applications. Even College and Scientific students who propose to be physicians or surgeons are often unaware that they should take at least three courses in zoölogy during their residence in Cambridge. The student who has made himself familiar with the elements of zoölogy and botany, and has learned the technique of the microscope, comes to the study of medicine with great advantages.

The description of the new building for the Department of Geology and Geography is the feature of chief interest in the report of the Chairman of that Department (p. 285). The new quarters are spacious, convenient, and attractive, and it is impossible to overestimate their value to both teachers and students. A considerable proportion of the publications of the Department during the year related to geography and meteorology.

The annual publications of the Peabody Museum of American Archaeology and Ethnology are increasing in number and value; and the number of persons who are engaged in anthropological and ethnological research under the auspices of the Museum also increases from year to year. It follows from these facts that the collections increase rapidly in interest and value. For this reason it is highly desirable that the enlargement of the present Museum, provided for in the plan of the original quadrangle designed by Professor Louis Agassiz, should be built without delay. The sum of \$150,000 is needed for this purpose.

The completion of the new Semitic Museum, which the University owes to the generosity of Mr. Jacob H. Schiff, of New York City, was the fact of chief interest in 1902 for the Division of Semitic Languages and History. The Museum accommodates all the activities of the Division; for it contains three lecture rooms and the library as well as exhibition rooms and a room for the Curator. A description of the building and of the arrangement of the collections therein will be found in the

Curator's report (p. 301). Valuable gifts were received and others promised during the year. Objects were also purchased to the extent of about \$5,500. The Curator is, however, convinced that the interests of the Museum, as well as of Semitic Archaeology, may best be promoted by actual exploration and excavation in Egypt, Palestine, or Babylonia. He expresses the hope that persons interested in the branches of learning which the Museum illustrates will enable the University to take part in the great work of Semitic exploration and research which awaits competent field students.

Valuable additions were made to the Fogg Art Museum during the year 1901-02, partly as indefinite loans, partly by purchase. The acquisitions of original works of art were all of a high character. They include precious objects of Ancient Greek and Egyptian art, ten prints of Turner's *Liber Studiorum* in the etched state, a water-color drawing by Turner, a small early drawing by the same master, and a superb drawing of his middle period, a large panel by Fra Filippo Lippi, and a panel by John Bellini. When the Fogg Museum was first planned, it was supposed that the collection might be confined to casts, prints, and photographs, including lantern slides; but it has already become clear that in addition to these collections of reproductions, the Fogg Museum is to contain a selection of valuable original works of art in considerable variety. In one respect the building, which has answered its original purposes very well, is not adapted to this new use. It contains no suitable gallery for the exhibition of paintings, since the walls of the upper story are not well lighted. The Museum already includes examples of the early Italian schools of painting which are of real importance; but they cannot be well seen. Although the Fogg Art Museum was only finished in 1895, it is already time that the problem of enlarging it should be carefully studied, particularly with a view to obtaining ample, well-lighted wall space for the exhibition of paintings and drawings.

The Department of Mineralogy acquired two rooms on the second floor of the new southwest corner-piece of the University

Museum ; so that its laboratory accommodations are now good. The Mineral Collection does not increase as it should, because there is very little money available for purchases. The Curator could use to advantage an income of several thousand dollars a year, whether the proceeds of an endowment or gifts for immediate use. Minerals were the material of one of the very earliest collections made for Harvard College ; but of late years the University has not been able, for lack of money, to keep the collection in the leading position to which its age entitles it.

The important events at Radcliffe College in 1901-02 were the opening of Bertram Hall, and the conferring of the first Radcliffe degrees of Doctor of Philosophy. The Dean calls attention (p. 314) to the fact that among the 415 women who had taken their A.B. degree, or a certificate, between June, 1883, and June, 1901, inclusive, the first death occurred in 1902. This first death was followed by two others before the first of September, 1902. The death rate is certainly a very low one, considering that nineteen years have elapsed.

Radcliffe College affords admirable opportunities for benefactors who wish to promote the higher education of women. Such benefactions might take the form of buildings or of endowments ; either form would surely be immediately and permanently serviceable.

The Harvard Union did not succeed during its first year in acquiring a membership numerous enough to support it properly with the low fee of \$10 for active members. It was nevertheless considered imprudent to increase this fee. The Union could not pay the moderate ground-rent which the University charged for the ground occupied by the Union, and it could not lay aside a proper sum to cover depreciation. Nevertheless the result must be considered a very fair one for the first year. The membership to the middle of December of the current year presents a little larger total than that of the end of last year, the life memberships, both graduate and student, and the non-resident memberships having slightly increased, and the active and associate mem-

berships having slightly diminished. There being in Cambridge 3,686 students and 594 teachers and other officers, there are at present (December 19) 2,627 active and associate members of the Union. It appears, therefore, that thus far nearly two-fifths of the persons eligible to the Union have failed to join it. There is need of 500 more active members, or 2,000 more life members, or some combination of these two kinds of members which would produce \$5000 a year. There are now (December 19, 1902) 880 life members, and the fees for life membership are funded. It is hardly necessary to say that the Union gives its members a great deal in return for its annual fee. It is also an invaluable social centre for the student body, and a very agreeable place for hospitalities to visiting parents, friends, and other guests in Cambridge. It commends itself greatly to every experienced university official who visits Cambridge, and several other universities are making strenuous efforts to reproduce it on their own grounds.

The rise in the scale of living among members of the University continues to excite some apprehension in the minds of friends of the higher education. The rise is general, and includes lodgings, food, furniture, light, heat, ventilation, and the provision of books and apparatus. The present price of board in Memorial Hall (about \$4.10 per week) is higher than the highest rate of board in private houses in Cambridge fifty years ago. The poorest student of to-day in the cheapest college dormitories is better provided with light, heat, books, and apparatus than the richest student was fifty years ago. The rich students of to-day in some of the private dormitories are provided with luxuries which the most expensive private houses in American cities do not provide, — such, for example, as covered courts for ball-play, and large swimming baths kept in exquisite order. The mode of life of professors in Cambridge has not changed so much in relation to the mode of life of other residents in the vicinity of the University, as the mode of life of the students has changed in reference to that of their predecessors. One hundred years ago the professors' houses in Cambridge were the best in the village. Professors' houses are no longer the best; they are undoubtedly more comfortable

than the professors' houses were one hundred years ago, but the houses of many other residents now much surpass theirs in size and in style. The rise in the scale of living is general throughout the American community, and is by no means peculiar to university life; and so far as this rise procures any comfort or security for health, it is well; but when it goes beyond those limits and adds luxury to comfortable living, it is not well. It must not be supposed that all the private dormitories are objectionably luxurious: a few are too luxurious; but several private investors have found it for their interest to build halls for students which are large and well-equipped, but yet make no extravagant provisions for their occupants, and to charge rents which do not greatly exceed the rents in those College dormitories where the prices are highest. The University cannot expect by the exercise of its own powers to repress or prevent undue luxury among its students; the coöperation of parents and guardians is necessary to this end. Fortunately the number of students who are able to pay for luxuries is relatively very small, and the mode of life of a great majority of the students perforce remains simple. For some reasons one could wish that the University did not offer the same contrast between the rich man's mode of life and the poor man's that the outer world offers; but it does, and it is not certain that the presence of this contrast is unwholesome or injurious. In this respect, as in many others, the University is an epitome of the modern world.

The Stillman Infirmary was completed by Commencement, 1902, but was not opened until the beginning of the current year. The establishment is as nearly perfect as possible. The Corporation have not yet learned how the expenses of the Infirmary are to be met, but for the present those who resort to it pay \$14 a week for regular hospital accommodation, diet, and nursing in a ward, and higher fees for a private room and special nursing. These rates are of course prohibitory for poor students. An effort to enroll from among the instructors and students resident in Cambridge two thousand men who would pay an annual fee of four dollars, in

return for which they should be entitled to ward accommodation and nursing, in case they were sick, did not succeed. Rather fewer than one thousand persons desired to pay such an insurance fee. Thus far the Corporation have hesitated to impose such a fee on all students resident in Cambridge. Three small funds aggregating \$8,513 have been received, the income of which is applicable to the care of poor students at the Infirmary.

In September, 1902, there came before the Corporation an interesting proposition from a committee of the Association of the Alumni concerning the celebration of Commencement week. The Corporation immediately forwarded it to the several Faculties with a request for their advice, but the current year was somewhat advanced before the advice of the professional Faculties was received, and the Faculty of Arts and Sciences, wishing to consult the Senior and Junior Classes, has not yet made reply.

The Comptroller has again made an improvement in the accounts annually published in the Treasurer's Statement. He has placed at the head of Tables I to XIV (pages 56 to 97) the gifts for capital account, if any, received during the year. There is an exception in the case of the Medical School, under which head a separate title has been created called "Medical School Undertaking." During the progress of that great work a separate account of receipts and expenditures will be rendered each year in the Treasurer's Statement as a sub-head in Table VI.

It will be seen in the Treasurer's Statement (p. 28) that a gain arising from the sale of the "Brattle Street Reversion," amounting to \$295,816.25, was credited in 1901-02 to the account called "Gains and losses for general investments." This transaction is an unusually interesting one. At a meeting of the President and Fellows of Harvard College in Boston, March 12, 1818, Mr. John Lowell communicated to the Corporation a proposal from Messrs. David Greenough and Thomas B. Wales, proprietors of land on Brattle Street, to convey the same to the President and Fellows on the following terms:— That the Corporation shall assign to them \$70,000 of 6% stock

at the present market value, that the whole of said land shall be covered by its proprietors with substantial buildings of stone agreeably to a plan produced, and that these buildings shall be leased by the Corporation to the proprietors for one hundred years for one barley-corn a year, in consideration of which the latter are to repay the above sum of \$70,000 with interest. The Corporation referred this proposition to Mr. John Lowell and Mr. John Phillips for consideration, who consulted Messrs. Prescott, Stearns, and Gorham as to the legality of the said negotiation and contract. These gentlemen having given an opinion that the proposition was perfectly legal, and might be carried into effect without risk, the Committee of the Corporation reported in favor of accepting the proposition of Messrs. Greenough and Wales, provided that the sum to be advanced should be reduced to \$50,000, and that the rate of interest from the time of the advance till the year 1834 should be raised to  $5\frac{1}{2}\%$ . With these modifications the proposition of Messrs. Greenough and Wales was carried out. This lease expires in June, 1919, but already the reversion has been bought for the sum named above. The loans were repaid with interest as agreed, though with some unanticipated delay. Since the stores built on the land with the money advanced by the Corporation increased very much in value, it is probable that the transaction was a profitable one to the descendants of Messrs. Greenough and Wales. It certainly has proved a profitable one to the President and Fellows. For many years the value of the reversion has been carried on the Treasurer's books at \$1,000. All the funds represented by the general investments share in the advantages of this transaction.

Of all University endowments the most fundamental and permanently valuable are endowed professorships; for they secure good teaching generation after generation, so far as security can be predicated of any human contrivance which depends on the perpetuity of civilization. The two essential provisions at any seat of learning are teaching and accumulations of books, and the endowments which secure these two provisions are the fundamental endowments. The en-

dowed professorships in Harvard University are now forty in number, of which ten have been provided within the last six years. The two Hollis professorships are the earliest, for they date from 1713 and 1726 respectively. In the last thirty-five years of the 18th century six other professorships were founded. Between 1814 and 1819 four others were established; and between 1829 and 1892 inclusive eighteen professorships were endowed at irregular intervals. Of the ten professorships endowed during the last six years seven have endowments of \$100,000 or more, whereas many of the earlier endowments were inadequate for the support of a professor even at the time they were given, and have since become still more inadequate. Four professorships were endowed in the year under review, namely, the George Higginson Professorship of Physiology, the James Stillman Professorship of Comparative Anatomy, the Professorship of Architecture, and the Professorship of Landscape Architecture.

The Hollis endowment for the Professorship of Mathematics and Natural Philosophy was given in 1713, and this professorship has been held by a line of seven eminent men, including John Winthrop in the 18th century, and John Farrar and Joseph Lovering in the 19th. The Eliot Professorship of Greek Literature, endowed in 1814, has been held successively by Edward Everett, John Snelling Popkin, Cornelius Conway Felton, William Watson Goodwin, and Herbert Weir Smyth. The Royall Professorship, which was established in 1815 under the will of Isaac Royall who died in 1781, has been held successively by Isaac Parker, John Hooker Ashmun, Simon Greenleaf, William Kent, Joel Parker, Nathaniel Holmes, James Bradley Thayer, and John Chipman Gray. The names of the teachers who have held these three endowed professorships well illustrate the extraordinary productiveness of such endowments. On the other hand the names of the benefactors who have provided professorship funds are commemorated in a lively and lasting manner. It is therefore a subject for hearty congratulation that the present generation of educational benefactors has resorted in so many instances to this particular form of benefaction.



It is pleasant to observe among the gifts of the year three which are reinforcements of funds that have long been in the possession of the Corporation. The Bowdoin Prize Fund given by Governor James Bowdoin dates from 1791. In 1901-02 Mr. George Sullivan Bowdoin, a descendant of Governor Bowdoin, added \$15,000 to that fund, thus doubling it. In the same year the George C. Shattuck fund in the Medical School, which dates from 1853, received an addition of \$13,500 from the sons of the founder; and the Jackson Fund, which dates from 1859, received an addition of \$12,500 from a kindred source. These reinforcements of old funds have occurred before in the history of Harvard College: thus, the Hersey Professorship fund of 1772 was doubled in 1856 by Thomas Lee's gift of \$20,000, and the Eliot Professorship fund of 1814 was increased by \$10,000 in 1854 by a gift from Jonathan Phillips. Again, the Hancock Professorship of 1765, which had a fund of only \$6,000 down to 1891, has now a fund of \$83,000 through the bequest of Charles L. Hancock, a remote descendant of the founder. These instances prove that the founders of wise educational endowments may reasonably expect that some descendant will reinforce the original benefaction if it become inadequate, and will take satisfaction in associating himself with the beneficent work of his ancestor. It appears that this expectation may be fulfilled even after the lapse of four or five generations.

The professorships of architecture and landscape architecture just mentioned were endowed last summer by Mr. and Mrs. Nelson Robinson, the givers of Nelson Robinson Jr. Hall. Informing the President and Fellows that they intended to add to the endowment of \$300,000 which they had already provided for the Hall, they recast their earlier prescriptions concerning the uses to which the income of the endowment should be applied. This new statement of the objects of the endowment, which was very acceptable to the President and Fellows, is printed in the Appendix (p. 346). Among the objects of the enlarged endowment will be found the payment of the salaries of the principal professor of architecture and the professor of landscape architecture.

On the 6th of March, 1902, at a special academic session in Sanders Theatre, the degree of Doctor of Laws was conferred on Prince Henry of Prussia, who was at that time visiting the United States as the personal representative of the Emperor of Germany and the guest of the American government. This act of conferring an honorary degree on a foreign prince at a special session is unique in the history of the University.

The attention of the Overseers is respectfully invited to the following reports of the Deans of the Faculties and Schools, and the Directors of the Scientific Establishments. These reports contain not only the usual tabular information, but also many new facts and valuable discussions. It is impossible to get any satisfactory idea of the activities of the University without reading these reports.

CHARLES W. ELIOT, *President.*

CAMBRIDGE, 12 January, 1903.



13. Professor TOY. — History of the Hebrew Religion, with comparison of other Semitic religions. 3 Di. Total 3.

*Primarily for Graduates :—*

- ‡2. Professor TOY. — Hebrew (second course). Interpretation of parts of the Prophets and the Poetical Books. 1 Se., 1 So., 1 Sp. Total 3.
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- A. Mr. HARRIS and Dr. CHASE. — Homer; Attic Prose. Composition. 2 Ju., 18 Fr. Total 15.
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1. Asst. Professor COOLIDGE, assisted by Messrs. LELAND and MURPHY. — Mediaeval and Modern European History (introductory course). 38 So., 350 Fr., 30 Sp., 16 Sc. Total 434.

*For Undergraduates and Graduates:—*

2. Professor WRIGHT. — History of Greece to the Roman Conquest. 7 Gr., 11 Se., 15 Ju., 2 So., 2 Sp. Total 37.
6. Professor EMERTON. — The first Eight Christian Centuries. 3 Se., 4 Ju., 1 So., 4 Sp., 9 Di. Total 21.
7. Professor EMERTON. — The Era of the Reformation in Europe from the rise of Italian Humanism to the close of the Council of Trent (1350-1563). 8 Gr., 3 Se., 3 Ju., 2 So., 1 Sp., 3 Di. Total 20.
8. Professor GROSS. — History of France to the reign of Francis I. 2 Gr., 2 Se., 2 Ju., 5 So. Total 11.
9. Professor GROSS. — Constitutional History of England to the Sixteenth Century. 9 Gr., 10 Se., 10 Ju., 7 So., 1 Sp. Total 37.
- 12 <sup>1</sup>/<sub>hf.</sub> Professor MACVANE, assisted by Mr. SHEARER. — English History from the Revolution of 1688 to the Reform of Parliament. 4 Gr., 6 Se., 14 Ju., 22 So., 1 Fr., 3 Sp., 1 Sc. Total 51.
- 12 <sup>2</sup>/<sub>hf.</sub> Professor MACVANE, assisted by Mr. SHEARER. — English History since the Reform of Parliament. 5 Gr., 8 Se., 17 Ju., 26 So., 1 Fr., 3 Sp. Total 60.
- 28 <sup>1</sup>/<sub>hf.</sub> Dr. FAY. — History of Continental Europe in the Seventeenth Century. 5 Gr., 33 Se., 53 Ju., 27 So., 2 Fr., 2 Sp., 3 Sc. Total 125.
- 16 <sup>1</sup>/<sub>hf.</sub> Professor MACVANE and Dr. FAY. — History of Continental Europe from the peace of Utrecht to the fall of Napoleon I. 5 Gr., 25 Se., 28 Ju., 81 So., 7 Fr., 8 Sp., 4 Sc. Total 158.
- 16 <sup>2</sup>/<sub>hf.</sub> Professor MACVANE and Dr. FAY. — History of Continental Europe since the fall of Napoleon I. 5 Gr., 15 Se., 22 Ju., 76 So., 3 Fr., 6 Sp., 4 Sc. Total 131.

15. Asst. Professor COOLIDGE. — History of North-Eastern Europe (Denmark, Sweden, Poland, Russia) from 1453 to 1795.  
3 Gr., 7 Se., 3 Ju., 2 So., 1 Sp. Total 16.
10. Professor CHANNING, assisted by Mr. BINGHAM. — American History to 1783.  
3 Gr., 20 Se., 44 Ju., 112 So., 2 Fr., 5 Sp., 3 Sc. Total 189.
18. Professor HART, assisted by Messrs. CUSHING and DORMAN. — Constitutional and Political History of the United States (1783–1865).  
7 Gr., 82 Se., 99 Ju., 53 So., 5 Fr., 11 Sp., 4 Sc. Total 211.
- 24 <sup>h</sup>f. Mr. W. G. BROWN. — Constitutional and Political History of the United States since the Civil War.  
5 Gr., 54 Se., 78 Ju., 67 So., 4 Fr., 7 Sp., 7 Sc., 1 Law. Total 223.
14. Professor HART. — History of American Diplomacy.  
7 Gr., 2 Se., 1 So. Total 10.

*Primarily for Graduates :—*

22. Professor GROSS. — The Sources and Literature of English Constitutional History.  
3 Gr. Total 3.
23. Professor CHANNING. — Selected Topics in the historical development of American Institutions.  
9 Gr., 1 Di. Total 10.
- 27 <sup>h</sup>f. Professor CHANNING. — The Sources and Literature of American History.  
18 Gr. Total 13.

SEMINARY COURSES IN HISTORY AND GOVERNMENT.

*Primarily for Graduates :—*

- 20a. Professor EMERTON. — Church and State.  
2 Di. Total 2.
- 20b. Professor GROSS. — English Institutions in the Middle Ages.  
1 Gr. Total 1.
- 20d. Asst. Professor COOLIDGE. — Recent Diplomatic History of Europe.  
1 Gr., 1 Se. Total 2.
- 20e. Professors CHANNING and HART. — American History and Institutions.  
9 Gr. Total 9.
- 20f. Professor CHANNING. — English Institutions in the Tudor and Stuart Periods.  
1 Gr. Total 1.

GOVERNMENT.

*Primarily for Undergraduates :—*

1. Professor LOWELL, assisted by Dr. GOODWIN, and Messrs. WARREN, BURNHAM, and STEPHENS. — Constitutional Government (elementary course).  
4 Ju., 114 So., 243 Fr., 34 Sp., 26 Sc. Total 421.

*For Undergraduates and Graduates :—*

4. Professor STROBEL and an assistant. — Elements of International Law.  
10 Gr., 35 Se., 31 Ju., 8 So., 3 Sp., 1 Sc. Total 88.
- 7 <sup>h</sup>f. Professor MACVANE. — Leading Principles of Constitutional Law. Selected cases (American and English).  
1 Gr., 8 Se., 10 Ju., 8 So., 1 Fr., 2 Sp. Total 30.

8 *hf.* Professor EMERTON. — Selected Topics from the Canon Law, with especial reference to the development of the Church Constitution. 1 Gr. Total 1.

*Primarily for Graduates : —*

14. Professor J. B. THAYER. — Constitutional Law in the United States. 1 Gr. Total 1.
15. Professor STROBEL. — International Law as administered by the Courts. 2 Gr., 4 Se., 2 Law. Total 8.

#### COURSES OF RESEARCH.

- 20a. Professor MACVANE — Political Conditions and Questions of the time in European Countries. 1 R. Total 1.
- 20b. Professor LOWELL. — English Political Institutions at the present day. 2 Gr., 1 Ju. Total 3.
- 20c. Professor STROBEL. — International Law. 2 Gr. Total 2.

#### Economics.

*Primarily for Undergraduates : —*

1. Drs. ANDREW, MIXTER, and SPRAGUE, and Messrs. PATTEN and MONTAGUE. — Outlines of Economics. 19 Se., 79 Ju., 239 So., 37 Fr., 27 Sp., 26 Sc., 5 Bu. Total 432.

*For Undergraduates and Graduates : —*

2. Asst. Professor CARVER. — Economic Theory. 5 Gr., 6 Se., 17 Ju., 2 So., 2 Sp. Total 32.
3. Asst. Professor CARVER. — The Principles of Sociology. Theories of Social Progress. 5 Gr., 17 Se., 17 Ju., 10 So., 2 Sp., 1 Sc., 1 Di. Total 58.
- 14 *hf.* Asst. Professor CARVER and Mr. BUSHÉE. — Socialism and Communism. 5 Gr., 14 Se., 2 Ju., 3 So., 2 Sc., 1 Di. Total 37.
17. Professor RIPLEY and Mr. MEYER. — The Economic Organization and Resources of European Countries. 2 Gr., 13 Se., 6 Ju., 2 So., 1 Sc. Total 24.
6. Dr. SPRAGUE and Mr. PATTEN. — The Economic History of the United States. 7 Gr., 33 Se., 53 Ju., 19 So., 8 Sp., 5 Sc. Total 125.
- 9 *hf.* Dr. DURAND. — The Labor Question in Europe and the United States. 5 Gr., 20 Se., 46 Ju., 32 So., 1 Fr., 5 Sp., 7 Sc. Total 116.
- 9a *hf.* Dr. DURAND. — Problems of Industrial Organization. 5 Gr., 19 Se., 12 Ju., 7 So., 1 Sp., 1 Sc. Total 45.
- 4 *hf.* Professor RIPLEY. — Statistics. Theory, method, and practice. 2 Gr., 2 Se., 1 Ju. Total 5.
- 5 *hf.* Professor RIPLEY. — Railway Economics with particular reference to the United States. 6 Gr., 40 Se., 19 Ju., 5 So., 2 Sp., 7 Sc., 2 Law. Total 81.
- 5 *hf.* Mr. MEYER. — The Problems of Public Ownership of Railways; and the Question of the Public or the Private Ownership of Street Railways, Gas, and Electric Lighting Plants. 5 Gr., 20 Se., 11 Ju., 5 So., 3 Sp., 4 Sc., 1 Law. Total 49.

8. Drs. ANDREW and SPRAGUE, and Mr. MEYER.—Money. Banking and International Payments. 5 Gr., 35 Se., 30 Ju., 4 So., 1 Sp., 3 Sc. Total 78.
- 7a <sup>1</sup>/<sub>hf</sub>. Professor BULLOCK (Williams College).—Financial Administration and Public Debts. 2 Gr., 16 Se., 5 Ju., 1 So., 2 Sc. Total 26.
- 7b <sup>1</sup>/<sub>hf</sub>. Professor BULLOCK (Williams College).—The Theory and Methods of Taxation, with special reference to local taxation, in the United States. 2 Gr., 13 Se., 9 Ju., 1 Sp., 1 Sc. Total 26.
- 16 <sup>1</sup>/<sub>hf</sub>. Professor BULLOCK (Williams College).—Selected Topics in the Financial History of the United States. 2 Gr., 5 Se., 1 Ju. Total 8.
- 18 <sup>1</sup>/<sub>hf</sub>. Mr. W. M. COLE.—The Principles of Accounting. 1 Gr., 24 Se., 5 Ju., 2 So., 1 Sp., 2 Sc., 1 Law. Total 36.
21. Mr. WYMAN.—Principles of Law in their application to Industrial Problems. 24 Se., 6 Ju., 2 So., 1 Sp. Total 33.
- Primarily for Graduates:—*
- ‡15. Dr. MIXTER.—The History and Literature of Economics to the opening of the Nineteenth Century. 3 Gr., 2 Se. Total 5.
- ‡18 <sup>2</sup>/<sub>hf</sub>. Asst. Professor CARVER.—Methods of Economic Investigation. 1 Se., 1 Ju., 1 So., 2 Di. Total 5.

#### 20. THE SEMINARY IN ECONOMICS.

Competent students were guided in investigation, undertaken independently or in connection with courses primarily for graduates, and the results were presented for discussion. 6 Gr., 2 Law. Total 8.

#### History of Religions.

- 2 <sup>2</sup>/<sub>hf</sub>. Professor G. F. MOORE.—General Introduction to the Study of Religion; psychological and historical. 2 Se., 1 Ju., 1 Sp. Total 4.

#### Philosophy.

*Primarily for Undergraduates:—*

- 1a. Professors MÜNSTERBERG and ROYCE, assisted by Dr. B. RAND.—General Introduction to Philosophy. Psychology. Logic. 7 Se., 71 Ju., 93 So., 39 Fr., 24 Sp., 21 Sc. Total 255.
- 1b. Professors PALMER and SANTAYANA, assisted by Dr. B. RAND.—Outlines of the History of Philosophy, Ancient and Modern. 1 Gr., 5 Se., 75 Ju., 64 So., 9 Fr., 11 Sp., 6 Sc., 1 Di. Total 172.

*For Undergraduates and Graduates:—*

- 14 <sup>2</sup>/<sub>hf</sub>. Dr. HOLT.—Experimental Psychology (elementary laboratory course). The psychology of sensation, and of the elementary mental processes. 3 Gr., 3 Se., 1 Ju., 1 So., 1 Sp. Total 9.
4. Professor PALMER.—Ethics. The Theory of Morals, considered constructively. 7 Gr., 31 Se., 16 Ju., 10 So., 3 Sp., 1 Sc., 10 Di. Total 78.
5. Professor PEABODY and Dr. B. RAND.—The Ethics of the Social Questions. The problems of Poor-Relief, the Family, Temperance, and various phases of the Labor Question, in the light of ethical theory. 7 Gr., 59 Se., 35 Ju., 15 So., 6 Sp., 4 Sc., 10 Di. Total 136.



- 10 <sup>hf</sup>. Asst. Professor SANTAYANA. — Aesthetics. The Philosophy of Art, with a survey of aesthetic theories.  
9 Gr., 34 Se., 17 Ju., 13 So., 1 Fr., 7 Sp., 7 Sc., 1 Di. Total 89.
9. Professor ROYCE. — Metaphysics. The fundamental problems of Theoretical Philosophy. Realism and Idealism; Freedom, Teleology, and Theism.  
10 Gr., 4 Se., 5 Ju., 4 So., 4 Di. Total 27.
- 15 Professor ROYCE. — Theory of Knowledge. The Processes of Conception, Judgment, and Reasoning. The Relations of Thought and Reality. The Elements of Symbolic Logic.  
4 Gr., 3 Se. Total 7.
3. Dr. MILLER. — The Philosophy of Nature, with especial reference to Man's place in Nature. The Fundamental Conceptions of Science; the relation of Mind and Body; Evolution.  
2 Gr., 4 Se., 5 Ju., 3 So., 1 Di. Total 15.
- 13 <sup>hf</sup>. Dr. J. H. WOODS. — The Science of Religion. Studies in the comparative history of religions.  
2 Gr., 6 Se., 2 Sp., 4 Di. Total 14.
- 11 <sup>hf</sup>. Asst. Professor SANTAYANA. — Descartes, Spinoza, and Leibnitz.  
6 Gr., 10 Se., 3 Ju., 2 So. Total 21.
- 11 <sup>hf</sup>. Dr. MILLER. — The History of English Philosophy from Locke to Hume.  
4 Gr., 3 Se., 6 Ju., 3 So., 1 Sp. Total 17.
8. Asst. Professor SANTAYANA. — The Kantian Philosophy.  
10 Gr., 6 Se., 3 Ju., 1 So., 1 Sp. Total 21.
- Primarily for Graduates: —*
- †6 <sup>hf</sup>. Professor JAMES. — The Psychological Elements of Religious Life.  
12 Gr., 1 So., 3 Sp., 6 Di. Total 22.

## SEMINARY COURSES.

*Primarily for Graduates: —*

- †20a. Professor MÜNSTERBERG, Dr. HOLT, and Mr. YERKES. — Psychological Laboratory. Experimental investigations.  
12 Gr., 1 Se., 1 Instr. Total 14.
- 20b. Professor MÜNSTERBERG. — Psychological Seminary. The Theory of the Will.  
17 Gr., 1 Se. Total 18.
- †20c. Professor ROYCE. — Metaphysical Seminary. The Problems of Logic. Studies of various fundamental conceptions of Philosophy and of Science.  
6 Gr., 1 Se. Total 7.
- †20d. Professor PALMER. — Ethical Seminary. The Ethics of Idealism. The Development of German Ethics in Kant, Fichte, and Hegel.  
12 Gr., 1 Se. Total 13.
- 20e. Professor PEABODY. — Sociological Seminary. The Ethics of Jesus Christ.  
9 Di. Total 9.
- 20f. Asst. Professor SANTAYANA. — Seminary in the History of Ancient Philosophy. Studies in Aristotle's Metaphysics.  
1 Gr. Total 1.
- †20g. Dr. MILLER. — Seminary in the History of Modern Philosophy. Ethical Ideals of the Nineteenth Century.  
2 Gr., 1 Se., 1 So., 1 Di., 1 Me. Total 6.

## Education.

*For Undergraduates and Graduates:—*

1. Mr. A. O. NORTON. — The History of Educational Theories and Practices.  
4 Gr., 11 Se., 5 Ju., 7 So., 1 Fr., 13 Sc. Total 41.
- 2<sup>1</sup>/<sub>2</sub>f. Professor HANUS. — Introduction to Educational Theory. Discussion  
of Educational Principles.  
2 Gr., 21 Se., 11 Ju., 4 So., 1 Sp., 8 Sc. Total 47.

*Primarily for Graduates:—*

- †3. Professor HANUS, assisted by Mr. A. O. NORTON. — Organization and  
Management of Public Schools and Academies. Supervision, Courses of  
Study, and Instruction. 10 Gr., 12 Se., 1 Sc., 1 Law. Total 24.
- †4<sup>1</sup>/<sub>2</sub>f. Professor HANUS. — The School Systems of England, France, and  
Germany. 3 Gr., 3 Se., 1 Ju. Total 7.
- †10<sup>6</sup>/<sub>7</sub>f. Dr. BIERWIRTH. — The Methods and Equipment of a Teacher of  
German in Secondary Schools. 2 Se., 1 Ju., 3 R. Total 6.

## SEMINARY COURSE.

- †20a. Professor HANUS. — Pedagogical Seminary. Contemporary Problems  
in Education. 6 Gr. Total 6.

## The Fine Arts.

*Primarily for Undergraduates:—*

1. Professor CHARLES H. MOORE, assisted by Mr. MOWER. — Principles of  
Delineation, Color, and Chiaroscuro, with some consideration of historic  
forms of art, and the conditions which have influenced them.  
1 Se., 10 Ju., 13 So., 20 Fr., 3 Sp., 15 Sc., 1 Bu. Total 63.
2. Professor CHARLES H. MOORE. — Principles of Design in Architecture,  
Sculpture, and Painting, as exemplified in the Arts of past ages.  
1 Se., 2 Ju., 2 So., 1 Sp., 2 Sc., 1 Bu. Total 9.

*For Undergraduates and Graduates:—*

3. Mr. EDWARD ROBINSON, assisted by Dr. VON MACH. — The History of Greek  
Art, with an introduction on the Arts of Egypt, Assyria, and Phoenicia,  
in their relation to Greek Art.  
2 Gr., 47 Se., 91 Ju., 104 So., 11 Fr., 11 Sp., 25 Sc. Total 291.
4. Professor CHARLES H. MOORE and an assistant. — The Fine Arts of the  
Middle Ages and the Renaissance.  
64 Se., 72 Ju., 35 So., 3 Fr., 11 Sp., 14 Sc., 1 Bu. Total 200.

*Primarily for Graduates:—*

- 20b. Professor CHARLES H. MOORE. — History and Principles of Engraving.  
2 Gr., 1 Se., 1 Sp. Total 4.

## Architecture.

*The courses in Architecture are intended primarily for students in the  
Lawrence Scientific School, and only Courses 1a, 1b, and 1c may be counted  
towards the degree of A.B.*

- 1a. Professor H. L. WARREN. — Technical and Historical Development of the  
Ancient Styles, with especial reference to Classic Architecture.  
3 Se., 7 Ju., 3 So., 1 Fr., 1 Sp., 13 Sc. Total 28.

- 1c. Professor H. L. WARREN. — Technical and Historical Development of Renaissance and Modern Architecture.  
3 Gr., 6 Se., 2 Ju., 2 So., 1 Sp., 22 Sc., 2 Bu. Total 38.
- 2a. Professor H. L. WARREN, and Messrs. NEWTON and SWAN. — Elementary Architectural Drawing. The Orders.  
3 Se., 1 Ju., 1 Fr., 14 Sc., 1 Bu. Total 20.
- 3a. Professor H. L. WARREN, assisted by Mr. SWAN. — Freehand Drawing.  
2 Gr., 2 Se., 1 Ju., 14 Sc. Total 19.
- 3b. Professor H. L. WARREN, assisted by Mr. SWAN. — Freehand Drawing (second course).  
1 Se., 7 Sc. Total 8.
- 3c. Professor H. L. WARREN and Mr. NEWTON. — Freehand Drawing (third course).  
5 Sc. Total 5.
- 4a. Professor H. L. WARREN and Mr. NEWTON, assisted by Mr. SWAN. — Elementary Architectural Design.  
1 Gr., 2 Se., 1 Ju., 7 Sc., 2 Bu. Total 13.
- 4b. Professor H. L. WARREN and Mr. NEWTON. — Architectural Design (second course).  
6 Sc. Total 6.
- 4c. Professor H. L. WARREN and Mr. NEWTON. — Architectural Design (advanced course).  
6 Sc. Total 6.
- 5<sup>hf</sup>. Mr. NEWTON. — Building Construction: Carpentry.  
1 Se., 1 Sp., 11 Sc. Total 13.
- 6<sup>hf</sup>. Mr. GARBUTT. — Modelling.  
4 Sc. Total 4.
- 7<sup>hf</sup>. Dr. ROSS. — Theory of Design. Pure Design (Balance, Rhythm, Harmony).  
2 Gr., 4 Se., 2 So., 1 Fr., 11 Sc. Total 20.

#### Landscape Architecture.

1. Mr. OLNSTED, assisted by Mr. SHURTLEFF (with occasional lectures by Professors GOODALE and SHALER). — History and Principles of Landscape Design.  
6 Se., 16 Ju., 5 So., 1 Sp., 13 Sc., 4 Bu. Total 45.
2. Messrs. OLNSTED and SHURTLEFF. — Practice in Landscape Design (first course).  
1 Sc., 3 Bu. Total 4.
3. Messrs. OLNSTED and SHURTLEFF. — Practice in Landscape Design (second course).  
1 Gr., 2 Sc. Total 3.

#### Music.

*For Undergraduates and Graduates: —*

1. Mr. SPALDING. — Harmony.  
1 Gr., 3 Se., 3 Ju., 6 So., 17 Fr., 2 Sp., 1 Sc. Total 33.
2. Mr. SPALDING. — Counterpoint.  
3 Se., 2 Ju., 8 So., 1 Fr., 1 Sp., 1 Sc. Total 16.
- 2a<sup>hf</sup>. Mr. SPALDING. — Vocal Counterpoint, with analysis of choral works of the great composers.  
1 Se., 2 Ju., 3 So., 1 Sp. Total 7.
3. Professor PAINE. — History of Music.  
10 Se., 4 Ju., 6 So., 2 Fr., 2 Sp., 4 Sc. Total 28.
- 4<sup>hf</sup>. Mr. SPALDING. — Musical Form, with analysis of the works of the great composers.  
1 Se., 1 Ju., 7 So., 1 Sp. Total 10.

*Primarily for Graduates : —*

- ‡5. Professor PAINE. — Canon and Fugue. Free Thematic Music.  
2 Ju. Total 2.
- ‡6. Professor PAINE. — Advanced Canon and Fugue and Free Composition.  
1 Gr., 1 Se. Total 2.
7. Professor PAINE. — Instrumentation. 1 Gr., 2 Se., 2 Ju. Total 5.

**Mathematics.***Primarily for Undergraduates : —*

- F. Dr. BOUTON and Mr. WHITTEMORE. — Trigonometry and Plane Analytic Geometry. 1 Se., 6 Ju., 12 So., 52 Fr., 3 Sp. Total 74.
- A <sup>1</sup>/<sub>2</sub>hf. Mr. ASHTON. — Logarithms. Plane and Spherical Trigonometry.  
1 Se., 2 Ju., 9 So., 14 Fr., 2 Sp. Total 28.
- B <sup>3</sup>/<sub>4</sub>hf. Mr. ASHTON. — Plane Analytic Geometry (elementary course).  
2 Se., 3 Ju., 3 So., 11 Fr., 2 Sc. Total 21.
- C. Asst. Professor M. BÔCHER. — Plane and Solid Analytic Geometry (extended course). 1 Gr., 2 Ju., 3 So., 17 Fr., 2 Sp., 5 Sc. Total 30.
- D <sup>1</sup>/<sub>2</sub>hf. Mr. J. L. COOLIDGE. — Algebra.  
1 Gr., 5 Se., 3 Ju., 6 So., 22 Fr., 2 Sp., 2 Sc. Total 41.
- E <sup>3</sup>/<sub>4</sub>hf. Mr. WHITTEMORE and Mr. J. L. COOLIDGE. — Solid Geometry.  
4 Se., 6 Ju., 17 So., 21 Fr., 1 Sp., 15 Sc. Total 64.
2. Asst. Professor OSGOOD and Dr. BOUTON. — Differential and Integral Calculus (first course).  
1 Gr., 5 Se., 6 Ju., 23 So., 1 Fr., 2 Sp., 1 Sc. Total 39.
4. Asst. Professor OSGOOD and Dr. BOUTON. — The Elements of Mechanics.  
5 Gr., 8 Se., 6 Ju., 3 So., 2 Sp., 1 Sc. Total 25.

*For Undergraduates and Graduates : —*

- 1 <sup>1</sup>/<sub>2</sub>hf. Mr. J. L. COOLIDGE. — Theory of Equations.  
2 Se., 1 Ju., 1 So., 2 Sc. Total 6.
3. Mr. WHITTEMORE. — Modern Methods in Geometry. Determinants.  
1 Gr., 5 Se., 1 Ju., 5 So., 1 Sp., 1 Sc. Total 14.
5. Professor BYERLY. — Differential and Integral Calculus (second course).  
5 Gr., 2 Se., 3 Ju., 2 So., 1 Sp., 4 Sc. Total 17.
6. Professor J. M. PEIRCE. — The Calculus of Quaternions (first course).  
5 Gr., 2 Se., 3 Ju., 2 So., 1 Sc. Total 13.
8. Professor BYERLY. — Dynamics of a Rigid Body.  
6 Gr., 1 Se., 1 Ju. Total 8.
- 12 <sup>1</sup>/<sub>2</sub>hf. Asst. Professor OSGOOD. — Infinite Series and Products. 6 Gr. Total 6.
- 14a <sup>3</sup>/<sub>4</sub>hf. Asst. Professor M. BÔCHER. — Algebra. The Properties of Polynomials; Invariants. 7 Gr. Total 7.
- 24 <sup>1</sup>/<sub>2</sub>hf. Dr. BOUTON. — The Theory of Numbers. 4 Gr., 1 Ju. Total 5.
- 18 <sup>3</sup>/<sub>4</sub>hf. Dr. BOUTON. — Elementary Theory of Differential Equations.  
4 Gr., 1 Se., 2 Ju. Total 7.

*Primarily for Graduates :—*

- ‡18. Asst. Professor OSGOOD.— The Theory of Functions (introductory course).  
10 Gr. Total 10.
- ‡7a. Professor J. M. PEIRCE.— The Theory of Triangular Coördinates and Algebraic Plane Curves, with special study of the properties of Cubics.  
2 Gr., 1 Ju. Total 3.
- ‡29. Mr. J. L. COOLIDGE.— Non-Euclidean Geometry. 1 Gr. Total 1.
- ‡10. Professor BYERLY.— Trigonometric Series. Introduction to Spherical Harmonics. The Potential Function. 11 Gr., 2 Sc. Total 13.
- ‡11. Mr. WHITTEMORE.— Hydrostatics. Hydrokinematics. Force Functions and Velocity-Potential Functions and their uses. Hydrokinetics.  
3 Gr. Total 3.
- ‡30<sup>1</sup>/<sub>2</sub>f. Asst. Professor M. BÔCHER.— Introduction to Partial Differential Equations.  
3 Gr. Total 3.
- ‡19. Asst. Professor M. BÔCHER.— Linear Differential Equations of the Second Order.  
1 Gr., 1 Instr. Total 2.

**Astronomy.***Primarily for Undergraduates :—*

- 1<sup>1</sup>/<sub>2</sub>f. Asst. Professor WILLSON and Mr. J. F. COLE.— Descriptive Astronomy.  
1 Gr., 22 Se., 17 Ju., 21 So., 3 Fr., 14 Sc. Total 78.
- 2<sup>3</sup>/<sub>4</sub>f. Asst. Professor WILLSON and Mr. J. F. COLE.— Practical Astronomy. Application of Astronomy to Navigation and Exploration.  
1 Gr., 1 Se., 4 Ju., 7 So., 2 Fr., 5 Sc. Total 20.

*For Undergraduates and Graduates :—*

3. Asst. Professor WILLSON.— Practical Astronomy. 2 Ju., 1 Sp. Total 3.

**Engineering.**

*The courses in Engineering are intended primarily for students in the Lawrence Scientific School, but many of them are counted towards the degree of A.B. The Catalogue shows what courses may be so counted.*

- 1a<sup>1</sup>/<sub>2</sub>f. Asst. Professor LOVE, and Messrs. ASHTON, FRIZELL, and E. V. HUNTINGTON.— Advanced Algebra.  
1 Se., 3 Ju., 8 So., 8 Fr., 2 Sp., 138 Sc. Total 160.
- 1b<sup>1</sup>/<sub>2</sub><sup>3</sup>/<sub>4</sub>f. Asst. Professor LOVE, and Messrs. ASHTON, FRIZELL, and E. V. HUNTINGTON.— Trigonometry.  
1 Se., 5 Ju., 10 So., 9 Fr., 1 Sp., 117 Sc. Total 143.
- 1d<sup>3</sup>/<sub>4</sub>f. Asst. Professor LOVE, and Messrs. ASHTON, FRIZELL, and E. V. HUNTINGTON.— Analytic Geometry. 1 Ju., 3 So., 8 Fr., 127 Sc. Total 139.
- 1c. Asst. Professor LOVE, and Messrs. ASHTON and E. V. HUNTINGTON.— Differential and Integral Calculus. 1 Se., 5 Ju., 7 So., 63 Sc. Total 76.
- 1f<sup>1</sup>/<sub>2</sub>f. Asst. Professor LOVE.— Integral Calculus and Differential Equations.  
5 Sc. Total 5.
- 3a. Messrs. KENNEDY, A. E. NORTON, DURANT and MEEM.— Mechanical Drawing. 1 Se., 12 Ju., 8 So., 15 Fr., 2 Sp., 117 Sc. Total 155.

- 3b<sup>1</sup>hf.** Mr. MOYER. — Descriptive Geometry.  
5 Se., 7 Ju., 6 So., 56 Sc. Total 74.
- 3d<sup>2</sup>hf.** Mr. KENNEDY. — Mechanism. Study of Gearing and Mechanical Movements.  
1 Se., 4 Ju., 3 So., 47 Sc. Total 55.
- 3e<sup>3</sup>hf.** Mr. MOYER. — Stereotomy, Shades, Shadows, and Perspective.  
4 Se., 1 Ju., 8 Sc. Total 13.
- \*4a.** Mr. TURNER and assistants. — Plane Surveying. (See page 94.)  
2 Gr., 1 Se., 16 Ju., 19 So., 4 Fr., 2 Sp., 39 Sc. Total 83.
- \*4c.** Mr. TURNER and assistants. — Geodetic Surveying. (See page 94.)  
11 Ju., 12 So., 3 Fr., 1 Sp., 84 Sc. Total 61.
- \*4d.** Mr. TURNER and assistants. — Railroad Surveying. (See page 94.)  
12 Ju., 11 So., 3 Fr., 33 Sc. Total 59.
- \*\*10a.** Asst. Professor BURKE. — Chipping, filing, and fitting. (See page 94.)  
2 Ju., 2 So., 1 Fr., 22 Sc. Total 27.
- \*\*10b.** Asst. Professor BURKE. — Blacksmithing. (See page 94.)  
2 Ju., 2 So., 1 Fr., 21 Sc. Total 26.
- \*\*10c.** Asst. Professor BURKE. — Pattern-making and Foundry Practice.  
(See also page 94.) 2 Ju., 2 So., 1 Fr., 24 Sc. Total 29.
- \*\*10e.** Asst. Professor BURKE. — Machine Shop Practice. (See also page 94.)  
2 Ju., 2 So., 1 Fr., 24 Sc. Total 29.

*For Undergraduates and Graduates:—*

- 4e<sup>2</sup>hf.** Mr. McCLINTOCK. — Construction and Maintenance of Common Roads.  
1 Gr., 26 Sc., 3 Bu. Total 30.
- 5b<sup>1</sup>hf.** Asst. Professor JOHNSON and Mr. MOYER. — Elementary Statics.  
Graphic and Algebraic Methods.  
2 Gr., 6 Se., 10 Ju., 9 So., 79 Sc. Total 106.
- 5d<sup>2</sup>hf.** Asst. Professor JOHNSON and Mr. MOYER. — Resistance of Materials  
(introductory course). Elementary Structural Design.  
4 Se., 9 Ju., 8 So., 62 Sc. Total 83.
- 5a.** Professor HOLLIS and Mr. SHAUGHNESSY. — Applied Mechanics.  
2 Gr., 2 Se., 2 Ju., 49 Sc. Total 55.
- 5c<sup>1</sup>hf.** Professor HOLLIS. — Resistance of Materials (second course).  
1 Gr., 1 Ju., 27 Sc. Total 29.
- 6a<sup>2</sup>hf.** Mr. F. A. SANBORN. — Hydraulics and Hydraulic Motors.  
1 Gr., 2 Se., 2 Ju., 2 So., 39 Sc. Total 46.
- 6c<sup>1</sup>hf.** Mr. FLINN. — Water Supply and Sanitary Engineering.  
14 Sc., 1 Bu. Total 15.
- 6d<sup>2</sup>hf.** Asst. Professor JOHNSON and Mr. MEAD. — Canals, Rivers, and Harbors.  
Irrigation. 11 Sc. Total 11.

\* "Courses 4a, 4c, and 4d follow in sequence during the same summer; Course 4a may be counted as one course, and Courses 4c and 4d together may be counted as one half-course, towards the degree of A.B."

\*\* "The four shopwork courses (10a, 10b, 10c, 10e) may be counted towards the degree of S.B. in General Science as the equivalent of one and one-half courses. They cannot be counted towards the degree of A.B."

- 7a. Asst. Professor JOHNSON. — Bridges and Buildings. Design of Framed Structures. 1 Gr., 10 Sc. Total 11.
- 8a <sup>3</sup>/<sub>4</sub>f. Asst. Professor JOHNSON. — Masonry and Foundations. 1 Gr., 1 Se., 31 Sc., 1 Bu. Total 34.
- 11a <sup>3</sup>/<sub>4</sub>f. Asst. Professor MARKS. — Steam Machinery. Introductory course. 1 Gr., 2 Se., 12 Ju., 12 So., 1 Fr., 76 Sc. Total 104.
- 12b <sup>1</sup>/<sub>4</sub>f. Asst. Professor MARKS. — Elements of Thermodynamics. Theory of Heat Engines. 1 Gr., 1 Se., 1 Ju., 39 Sc. Total 42.
- 12a <sup>1</sup>/<sub>4</sub>f. Asst. Professor MARKS. — Efficiency and Economics of Heat Engines. 1 Gr., 12 Sc. Total 18.
- 12c <sup>1</sup>/<sub>4</sub>f. Asst. Professor BURKE. — Heating and Ventilation. 13 Sc. Total 18.
- 13a. Asst. Professor MARKS, and Messrs. MOYER and WHITTIER. — Engineering Laboratory. Introductory course in experimental methods. 2 Gr., 1 Se., 1 Ju., 1 So., 36 Sc. Total 41.
- 13b. Asst. Professor MARKS and Mr. MOYER. — Engineering Laboratory (second course). 1 Gr., 12 Sc. Total 18.
- 14a <sup>1</sup>/<sub>4</sub>f. Mr. KENNEDY. — Machine Design (introductory course). 1 Se., 33 Sc. Total 34.
- 14b. Professor HOLLIS. — Machine Design (second course). 10 Sc. Total 10.
- 15a. Professor HOLLIS. — Marine Engines and Boilers. 1 Gr., 5 Sc. Total 6.
- 16a. Asst. Professor ADAMS and Mr. WHITING. — Generation, Transmission, and Utilization of Electrical Energy (elementary course). 5 Gr., 1 Se., 2 Ju., 47 Sc. Total 55.
- 16c <sup>1</sup>/<sub>4</sub>f. Asst. Professor ADAMS. — Direct Current Dynamo-Electric Machinery. 1 Gr., 6 Sc. Total 7.
- 16e. Asst. Professor ADAMS and Mr. WHITING. — Alternating Currents and Alternating Current Machinery. 2 Gr., 7 Sc. Total 9.
- 16d. Asst. Professor ADAMS. — Dynamo Design. 5 Sc. Total 5.
- 16f. Mr. WHITING. — Electrical Engineering Laboratory. 2 Gr., 5 Sc. Total 7.
- 18a <sup>3</sup>/<sub>4</sub>f. Asst. Professor BURKE. — Metallurgy. 1 Se., 34 Sc. Total 35.
21. Professor HOLLIS. — Conference on Engineering Subjects. 26 Sc. Total 26.
- 22 <sup>3</sup>/<sub>4</sub>f. Asst. Professor WESTENGARD. — Contracts and Specifications. The Principles of Common Law as applied to Contracts. 1 Gr., 38 Sc., 1 Bu. Total 40.

#### Physics.

*Primarily for Undergraduates:—*

- B <sup>3</sup>/<sub>4</sub>f. Professor E. H. HALL and Mr. LESOURD. — Experimental Physics (elementary course). 2 Gr., 5 Sc., 4 Ju., 27 So., 47 Fr., 16 Sp., 63 Sc. Total 164.
- C. Asst. Professor SABINE and Dr. McELFRESH. — Experimental Physics. Mechanics, Sound, Light, Magnetism, and Electricity. 1 Gr., 8 Se., 13 Ju., 16 So., 29 Fr., 6 Sp., 86 Sc., 1 Bu. Total 160.
1. Professor E. H. HALL and Mr. MCKAY. — General Descriptive Physics. 2 Gr., 1 Se., 7 Ju., 9 So., 2 Fr., 25 Sc. Total 46.

*For Undergraduates and Graduates :—*

- 2 <sup>1</sup>/<sub>2</sub>f. Asst. Professor SABINE and Mr. BLACKWELL.—The Theory of the Microscope, its accessories, and other optical apparatus used in the study of organisms. 2 Gr., 3 Se., 2 Ju., 3 So., 1 Sc. Total 11.
3. Professor B. O. PEIRCE and Dr. AYRES.—Electrostatics, Electrokinematics, and parts of Electromagnetism. 4 Gr., 3 Se., 3 Ju., 4 So., 1 Sp., 4 Sc. Total 19.
4. Professor TROWBRIDGE, Asst. Professor SABINE, and Dr. G. W. PIERCE.—Electrodynamics, Magnetism, and Electromagnetism. 5 Gr., 6 Sc. Total 11.
5. Asst. Professor SABINE.—Lectures and laboratory work in Thermometry and Physical Optics. 5 Gr., 2 Se., 1 Ju., 1 Sc. Total 9.
- 6 <sup>1</sup>/<sub>2</sub>f. Professor E. H. HALL.—Elements of Thermodynamics. 7 Gr., 2 Se., 1 Ju., 1 Sc. Total 11.
- 6 <sup>3</sup>/<sub>4</sub>f. Professor E. H. HALL.—Modern Developments of Thermodynamics. 7 Gr., 2 Se., 1 Ju., 1 Sc. Total 11.

*Primarily for Graduates :—*

## COURSES OF RESEARCH.

- 20a. Professor TROWBRIDGE.—Light and Electricity. 1 Gr. Total 1.
- 20c. Professor E. H. HALL.—Heat and Electricity. 1 Gr. Total 1.

## Chemistry.

*Primarily for Undergraduates :—*

- B. Mr. BLACK and Mr. ARCHIBALD.—Experimental Chemistry. 2 Se., 8 Ju., 11 So., 22 Fr., 1 Sp., 3 Sc. Total 47.
1. Professor C. L. JACKSON, Mr. CALHANE, and Messrs. MARK, BEHR, WYMAN, CARLTON, and BENEDICT.—Descriptive Inorganic Chemistry. 15 Se., 32 Ju., 64 So., 79 Fr., 4 Sp., 145 Sc., 1 Me., 1 Bu. Total 341.
- 2 <sup>1</sup>/<sub>2</sub>f. Mr. W. J. HALE.—Organic Chemistry (elementary course). 15 Se., 23 Ju., 12 So., 3 Fr., 2 Sp., 10 Sc. Total 65.
3. Asst. Professor SANGER, Mr. MCCARTHY, and Messrs. BONNET, FISKE, FORBES, and MOORE.—Qualitative Analysis. 1 Gr., 17 Se., 31 Ju., 22 So., 3 Fr., 4 Sp., 38 Sc. Total 116.
4. Asst. Professor SANGER and Mr. DUNLAP.—Quantitative Analysis, gravimetric and volumetric. 3 Se., 9 Ju., 1 So., 1 Sp., 10 Sc. Total 24.

*For Undergraduates and Graduates :—*

- 8 <sup>3</sup>/<sub>4</sub>f. Professor RICHARDS and Dr. G. N. LEWIS.—The Historical Development of Chemical Theory. 5 Gr., 5 Se., 11 Ju., 10 So., 9 Sc. Total 40.
- 9 <sup>1</sup>/<sub>2</sub>f. Professor RICHARDS and Mr. R. C. WELLS.—Advanced Quantitative Analysis. 3 Gr., 7 Se., 1 So., 3 Sc. Total 14.
- 10 <sup>3</sup>/<sub>4</sub>f. Professor RICHARDS and Mr. R. C. WELLS.—Gas Analysis. 7 Gr., 8 Se., 1 Ju., 1 So., 5 Sc. Total 22.
5. Professor H. B. HILL and Mr. W. J. HALE.—The Carbon Compounds. 7 Gr., 7 Se., 6 Ju., 8 Sc. Total 28.



*Primarily for Graduates :—*

6. Professor RICHARDS and Dr. G. N. LEWIS. — Physical Chemistry.  
7 Gr., 6 Se., 5 Sc. Total 18.
- 7 <sup>1</sup>/<sub>2</sub>hf. Dr. G. N. LEWIS. — Electrochemistry. 7 Gr., 6 Se. Total 13.

## COURSES OF RESEARCH.

- 20a. Professor RICHARDS. — Inorganic Chemistry, including Determination of Atomic Weights. 3 Gr., 1 Sc. Total 4.
- 20b. Professor C. L. JACKSON. — Organic Chemistry. 4 Gr., 1 Se., 1 Sc. Total 6.
- 20c. Professor H. B. HILL. — Organic Chemistry. 1 Gr., 1 Se., 1 Sc. Total 3.
- 20d. Professor RICHARDS. — Physical Chemistry. 6 Gr. Total 6.
- 20e. Asst. Professor SANGER. — Applied Chemistry. 1 Gr., 2 Se., 2 Sc. Total 5.

**Botany.***Primarily for Undergraduates :—*

- 1 <sup>1</sup>/<sub>2</sub>hf. Professor GOODALE and Mr. OLIVE. — Botany (introductory course).  
14 Se., 19 Ju., 33 So., 42 Fr., 6 Sp., 32 Sc. Total 146.
- 2 <sup>1</sup>/<sub>2</sub>hf. Professor THAXTER and two assistants. — Morphology of Plants.  
3 Gr., 5 Se., 3 Ju., 6 So., 2 Fr., 14 Sc., 1 Bu. Total 34.

*For Undergraduates and Graduates :—*

3. Professor GOODALE, and Messrs. OLIVE and AMES. — Botany (second course).  
Morphology, histology (with special reference to the technique of the microscope) and physiology of flowering plants.  
6 Se., 1 Fr., 5 Sc. Total 12.
- 4 <sup>1</sup>/<sub>2</sub>hf. Professor THAXTER and one assistant. — Cryptogamic Botany.  
1 Gr., 1 Se., 4 Sc., 1 Bu. Total 7.
5. Professor GOODALE and Mr. AMES. — The Principles of Botanical Classification, Ecology, and Plant Distribution. 4 Gr., 2 Se., 1 Sc. Total 7.

*Primarily for Graduates :—*

## COURSES OF RESEARCH.

- 20a. Professor GOODALE. — Structure and Development of Phanerogams. Experimental Vegetable Physiology. Economic Botany, with special reference to Tropical Plants. 5 Gr. Total 5.
- 20b. Professor THAXTER. — Structure and Development of Cryptogams. 4 Gr., 1 Sc. Total 5.

**Zoölogy.***Primarily for Undergraduates :—*

- 1 <sup>1</sup>/<sub>2</sub>hf. Asst. Professor G. H. PARKER, Mr. BREED, and other assistants. — Zoölogy (introductory course).  
1 Gr., 14 Se., 20 Ju., 26 So., 30 Fr., 6 Sp., 29 Sc., 1 Bu. Total 127.
- 2 <sup>1</sup>/<sub>2</sub>hf. Dr. CASTLE, Mr. PETERS, and a second assistant. — Morphology of Animals. 1 Gr., 6 Se., 6 Ju., 12 So., 5 Fr., 9 Sc. Total 39.

*For Undergraduates and Graduates:—*

3. Dr. H. W. RAND and Mr. CARPENTER.—Comparative Anatomy of Vertebrates. 6 Gr., 7 Se., 5 Ju., 3 So., 1 Sp., 16 Sc. Total 38.
- 4 <sup>1</sup>/<sub>2</sub>hf. Professor MARK and Dr. H. W. RAND.—Microscopical Anatomy. 3 Gr., 3 Se., 1 Ju., 7 Sc. Total 14.
- 5 <sup>2</sup>/<sub>3</sub>hf. Professor MARK and Dr. H. W. RAND.—Embryology of Vertebrates. 3 Gr., 3 Se., 1 Ju., 3 Sc. Total 10.
- 9 <sup>1</sup>/<sub>2</sub>hf. Asst. Professor R. T. JACKSON.—Fossil Invertebrates. 3 Gr., 1 Sc. Total 4.
- 9<sup>a</sup> <sup>2</sup>/<sub>3</sub>hf. Asst. Professor R. T. JACKSON.—Fossil Invertebrates. Advanced studies of special groups. 2 Sc. Total 2.
11. Dr. CASTLE.—Experimental Morphology. Phylogenesis. 7 Gr., 1 Ju. Total 8.
- 13 <sup>1</sup>/<sub>2</sub>hf. Asst. Professor G. H. PARKER.—Introduction to the study of the Nervous System. 4 Gr., 1 Se., 1 So., 1 Sc. Total 7.
- 15 <sup>2</sup>/<sub>3</sub>hf. Asst. Professor G. H. PARKER.—The Nervous System and its Terminal Organs. Sense Organs. 3 Gr., 1 Se., 1 So., 1 Sc. Total 6.
- Primarily for Graduates:—*

## COURSE OF RESEARCH.

- 20a. Professor MARK.—Anatomy and Development of Vertebrates and Invertebrates. 8 Gr., 1 Sc. Total 9.

## Geology and Geography.

*Primarily for Undergraduates:—*

- A <sup>1</sup>/<sub>2</sub>hf. Professor DAVIS and Mr. READ.—Physiography of the Lands. 1 Gr., 5 Se., 5 Ju., 7 So., 8 Fr., 3 Sp., 33 Sc., 2 Bu. Total 64.
- B <sup>2</sup>/<sub>3</sub>hf. Asst. Professor WARD, assisted by Mr. WILDER.—Meteorology (elementary course). 8 Se., 10 Ju., 25 So., 18 Fr., 6 Sp., 43 Sc., 1 Bu. Total 111.
- 4 <sup>1</sup>/<sub>2</sub>hf. Professor SHALER, assisted by Messrs. WOODMAN and READ.—Elementary Geology. 3 Gr., 17 Se., 55 Ju., 126 So., 141 Fr., 23 Sp., 79 Sc., 7 Bu. Total 451.
- 5 <sup>2</sup>/<sub>3</sub>hf. Asst. Professor J. B. WOODWORTH, aided by Mr. WOODMAN and other assistants.—Elementary Field and Laboratory Geology. 1 Gr., 5 Se., 11 Ju., 26 So., 39 Fr., 5 Sp., 56 Sc., 2 Bu. Total 145.
- 1 <sup>1</sup>/<sub>2</sub>hf. Asst. Professor WARD.—Meteorology (second course). 3 Se., 1 Ju., 1 So., 6 Sc., 2 Bu. Total 13.

*For Undergraduates and Graduates:—*

- 7 <sup>1</sup>/<sub>2</sub>hf. Professor DAVIS.—Physiography of Europe. 3 Gr., 3 Se., 1 Ju., 2 So., 22 Sc. Total 31.
8. Asst. Professor J. B. WOODWORTH, assisted by Mr. WOODMAN.—General Critical Geology. 1 Gr., 2 Se., 3 Ju., 1 So., 13 Sc. Total 20.

10. Professor H. L. SMYTH. — Mining Geology.  
3 Gr., 3 Se., 2 Ju., 29 Sc. Total 37.
22. Dr. JAGGAR. — Advanced Geological Field Work. Areal Geology in the vicinity of Boston.  
5 Gr., 2 Se., 1 Ju., 9 Sc. Total 17.
- 9 <sup>hf</sup>. Dr. JAGGAR. — Structural and Dynamical Geology of the United States.  
3 Gr., 2 Se., 1 Ju., 2 So., 1 Sp., 17 Sc. Total 26.
- 16 <sup>hf</sup>. Asst. Professor J. B. WOODWORTH. — Glacial Geology.  
1 Gr., 3 Se., 1 Sc. Total 5.
- 19 <sup>hf</sup>. Asst. Professor WARD. — General Climatology. 1 Ju., 2 Sc. Total 3.
- 25 <sup>hf</sup>. Asst. Professor WARD. — Climatology of the United States.  
3 Se., 2 Ju., 4 Sc. Total 9.
- 14 <sup>hf</sup>. Professor SHALER and Asst. Professor R. T. JACKSON, assisted by Mr. READ. — General Palaeontology.  
1 Gr., 24 Se., 12 Ju., 6 So., 1 Fr., 4 Sp., 27 Sc. Total 75.
- 14a <sup>hf</sup>. Asst. Professor R. T. JACKSON, assisted by Mr. READ. — General Palaeontology.  
4 Se., 1 Ju., 11 Sc. Total 16.
15. Professor SHALER and Asst. Professor R. T. JACKSON. — Historical Geology.  
1 Sc. Total 1.
- 18 <sup>hf</sup>. Professor H. L. SMYTH. — Economic Geology. Non-metalliferous products and water supply.  
1 Gr., 6 Sc. Total 7.

*Primarily for Graduates : —*

## COURSES OF RESEARCH.

120. Professor DAVIS. — Physiography (advanced course).  
2 Gr., 2 Se., 1 Sc. Total 5
21. Professor H. L. SMYTH. — Mining Geology (advanced course).  
3 Gr., 7 Sc. Total 10.
23. Professors SHALER, DAVIS, WOLFF, H. L. SMYTH, Asst. Professor J. B. WOODWORTH, and Dr. JAGGAR. — Geological Investigation in the Field and Laboratory.  
1 Gr., 1 Se., 1 Sc., 1 Instr. Total 4.
24. Professor SHALER and Asst. Professor R. T. JACKSON. — Advanced Palaeontology.  
1 Gr. Total 1.

**Mineralogy and Petrography.***Primarily for Undergraduates : —*

2. Dr. PALACHE, assisted by Mr. PRINDLE. — Mineralogy.  
3 Gr., 5 Se., 7 Ju., 9 So., 2 Fr., 1 Sp., 35 Sc. Total 62.
- 3 <sup>hf</sup>. Professor WOLFF. — Building Stones (course for students of Architecture).  
15 Sc. Total 15.

*For Undergraduates and Graduates : —*

- 7 <sup>hf</sup>. Dr. PALACHE. — Crystallography. 1 Gr. Total 1.
- 8 <sup>hf</sup>. Professor WOLFF and Dr. PALACHE. — Physical Crystallography (mainly Optical Mineralogy and its applications). 1 Gr., 1 Ju., 1 Sc. Total 3.
12. Professor WOLFF, assisted by Mr. PRINDLE. — Petrography.  
4 Gr., 2 Se., 10 Sc. Total 16.

*Primarily for Graduates :—*

## COURSE OF RESEARCH.

- ‡20. Professor WOLFF and Dr. PALACHE.—Mineralogical and Petrographical Research. 1 Gr. Total 1.

**Mining and Metallurgy.***For Undergraduates and Graduates :—*

- 1<sup>2</sup>hf. Professor H. L. SMYTH.—Mining. Prospecting and exploring; sampling, and the principles of exploitation. 8 Gr., 1 Se., 2 Ju., 20 Sc. Total 26.
- 9<sup>2</sup>hf. Asst. Professor SAUVEUR.—General Metallurgy. 1 Gr., 1 Se., 6 Ju., 5 So., 2 Fr., 33 Sc. Total 48.
- 2<sup>1</sup>hf. Asst. Professor SAUVEUR.—Metallurgy of iron and steel. 1 Gr., 5 Se., 6 Ju., 23 Sc. Total 35.
- 3<sup>2</sup>hf. Professor H. L. SMYTH.—Metallurgy of copper, lead, gold, silver, nickel, zinc, and the minor metals. 2 Gr., 3 Se., 4 Ju., 1 So., 14 Sc. Total 24.
4. Mr. RAYMER.—Ore-dressing, Concentration, and Milling. 2 Gr., 1 Se., 8 Sc. Total 11.
- 5<sup>1</sup>hf. Professor H. L. SMYTH.—Mining. Metal and coal mining; exploitation. 1 Gr., 1 Se., 9 Sc. Total 11.
- 11<sup>1</sup>hf. Mr. RAYMER.—Mining Plant. 1 Gr., 8 Sc. Total 9.
- 6<sup>2</sup>hf. Mr. C. H. WHITE.—Metallurgical Chemistry. 2 Gr., 1 Se., 1 Ju., 13 Sc. Total 17.
7. Mr. C. H. WHITE.—Metallurgical Chemistry (advanced course). 1 Gr., 1 Se., 4 Sc. Total 6.
- 10<sup>1</sup>hf. Mr. RAYMER.—Fire Assaying. 3 Gr., 1 Ju., 1 So., 21 Sc. Total 26.
12. Mr. RAYMER.—Mining. The study of mining operations. 11 Sc. Total 11.
- 14<sup>1</sup>hf. Asst. Professor SAUVEUR.—Metallography. 3 Sc. Total 3.

*Primarily for Graduates :—*

## COURSE OF RESEARCH.

20. Asst. Professor SAUVEUR.—Metallography and the Physics of Metals. 3 Gr., 2 Sc. Total 5.

**American Archaeology and Ethnology.***For Undergraduates and Graduates :—*

1. Dr. J. H. WOODS, Dr. DIXON, and Mr. FARABEE.—General Anthropology. Somatology. Prehistoric Archaeology of Europe and America. Ethnology. 11 Se., 11 Ju., 9 So., 1 Sp., 5 Sc. Total 37.

*Primarily for Graduates :—*

- ‡2<sup>2</sup>hf. Professor PUTNAM and Mr. HUXLEY.—Somatology. 1 Se., 1 Sc. Total 2.

- ‡8 <sup>1</sup>/<sub>2</sub>f. Dr. DIXON. — Primitive Religions. Theories of origin, animism, totemism, fetishism, ceremonial, symbolism, comparative mythology, and folklore. 1 Di. Total 2.
- ‡6 <sup>3</sup>/<sub>4</sub>f. Dr. DIXON. — Ethnology of the Pacific Coast of North America. Special reference to Linguistics. 5 Ju., 1 Sc. Total 6.

## COURSES OF SPECIAL STUDY.


- ‡20a. Professor PUTNAM. — American Archaeology and Ethnology. 1 Gr. Total 1.

## Anatomy, Physiology, and Hygiene.

1. Dr. DARLING, Dr. PROVANDIE, and Dr. BACON. — Elementary Anatomy and Physiology. Personal Hygiene. Emergencies. 1 Gr., 19 Se., 28 Ju., 48 So., 12 Fr., 9 Sp., 26 Sc. Total 148.
- 4 <sup>1</sup>/<sub>2</sub>f. Dr. SARGENT. — Anthropometry. 2 Gr., 4 Sc. Total 6.
- 5 <sup>3</sup>/<sub>4</sub>f. Dr. SARGENT. — Applied Anatomy and Animal Mechanics. 1 Gr., 2 Se., 2 So., 11 Sc., 1 Bu. Total 17.

In accordance with a vote of the President and Fellows whereby the Faculty may, under certain conditions, authorize a Doctor of Philosophy or a Doctor of Science to give instruction gratuitously or for such fees as he may himself collect, Dr. G. W. Pierce conducted a course in The Electro-Magnetic Theory of Light.

*Summer Courses of Instruction, 1902.*

The following courses were given, under the direction of the Faculty, in the summer of 1902. The abbreviations, with the addition of S.S. for "member of the Summer School," are the same as those in the preceding list. A hand  points to each course that may be counted toward a degree:—

## Greek.

- I. Dr. CHASE. — Greek for Beginners. 5 times a week, for 6 weeks. 1 R., 7 S.S. Total 8.

## Latin.

- I. Dr. PRESCOTT. — Latin for Teachers in the Secondary Schools. 5 times a week, for 6 weeks. 16 S. S. Total 16.

## English.

- A. Asst. Professor HURLBUT, assisted by Messrs. REYNOLDS and C. A. MOORE. — English Composition (elementary course). 5 times a week, for 6 weeks. 49 S. S. Total 49.
- B. Dr. MAYNADIER, assisted by Mr. C. A. MOORE. — English Composition (advanced course). 5 times a week, for 6 weeks. 30 S. S. Total 30.
- C. Mr. LA ROSE. — English Composition (second advanced course). 5 times a week, for 6 weeks. 5 S. S. Total 5.

- Mr. LAWRENCE. — Anglo-Saxon. Anglo-Saxon Reader and Grammar. 5 times a week, for 6 weeks. 7 S. S. Total 7.
- Dr. NEILSON. — Shakspeare. 5 times a week, for 6 weeks. 22 S. S. Total 22.
- Asst. Professor HURLBUT and Mr. YOUNG, assisted by Mr. REYNOLDS. — English Literature of the Eighteenth Century. 5 times a week, for 6 weeks. 17 S. S. Total 17.
- Dr. NEILSON. — English Literature in Outline, from Anglo-Saxon Times to the Present. 5 times a week, for 6 weeks. 22 S. S. Total 22.
- Mr. HILLS, assisted by Mr. B. G. WILLARD. — Voice Cultivation. 5 times a week, for 6 weeks. 1 Ju., 2 Law, 11 S. S. Total 14.
- Mr. WINTER. — Public Speaking and Reading. Course for teachers of reading and public speaking, and for teachers of English. 5 times a week, for 6 weeks. 1 Ju., 1 Law, 9 S. S. Total 11.

#### German.

- I. Dr. COAR. — Composition and Conversation. 5 times a week, for 6 weeks. 19 S. S. Total 19.

#### French.

- I. Dr. FORD. — Introductory Course. Grammar, reading, and translation. 5 times a week, for 6 weeks. 13 S. S. Total 13.

#### Spanish.

- I. Dr. FORD. — Introductory Course. Grammar, composition, and translation. 5 times a week, for 6 weeks. 6 S. S. Total 6.

#### History and Government.

- I. Professor MACVANE. — Mediaeval and Modern History. 5 times a week, for 6 weeks. 7 S. S. Total 7.
- II. Dr. A. L. CROSS. — English History. 28 lectures, supplemented by written exercises. 7 S. S. Total 7.
- III. Professor HART and Dr. A. L. CROSS. — American History. Lectures and training in the use of materials, and in the application of the laboratory method of study. 25 lectures, supplemented by 4 pieces of written work. 24 S. S. Total 24.
- IV. Professor MACVANE. — Civil Government. Lectures, reading, and reports. 5 times a week, for 6 weeks. 4 S. S. Total 4.

#### Psychology.

- I. Dr. YERKES. — The Psychology of the senses and the development of voluntary motor ability. 5 times a week, for 6 weeks. 1 Ju., 8 S. S. Total 9.
- II. Dr. YERKES. — Experimental investigations in the field of sensory and motor activity. 5 times a week, for 6 weeks. 1 Ju., 5 S. S. Total 6.

#### Education.

- I. Professor HANUS. — General Principles of Education. Courses of study; organization and administration of schools and school systems. 25 lectures, supplemented by written work and thesis. 45 S. S. Total 45

II. Mr. A. O. NORTON. — History of Educational Aims and Principles from antiquity to the present time. 25 lectures, supplemented by reading and reports. 10 S. S. Total 10.

III. Messrs. ALDRICH, BALLIET, HULING, MORSS, and PRINCE. — Organization and Administration of Schools, etc. 25 lectures. 15 S. S. Total 15.

#### Theory of Design.

Dr. ROSS and Mr. CLARK. — Lectures, with experimental practice, for designers, for teachers of Design, and for teachers of the History of Art. 1 Se., 79 S. S. Total 80.

#### Freehand Drawing.

Mr. H. B. WARREN. — Practice and personal instruction. 5 times a week, for 6 weeks. 5 S. S. Total 5.

#### Music.

I. Mr. D. G. MASON. — Grammar and Principles. 5 times a week, for 6 weeks. 2 S. S. Total 2.

II. Mr. D. G. MASON. — General Course. 5 times a week, for 6 weeks. 3 S. S. Total 3.

#### Mathematics.

SD. Asst. Professor LOVE. — Advanced Algebra. 5 times a week, for 6 weeks. 1 Se., 1 Ju., 1 So., 1 Sp., 1 Sc., 11 S. S. Total 16.

SE. Dr. HUNTINGTON. — Solid Geometry. 5 times a week, for 6 weeks. 1 Se., 6 Ju., 2 So., 1 Fr., 4 Sc., 1 Law, 4 S. S. Total 19.

SA. Mr. ASHTON. — Plane Trigonometry. 5 times a week, for 6 weeks. 2 Ju., 1 So., 3 Fr., 3 S. S. Total 9.

SB. Dr. HUNTINGTON. — Plane Analytic Geometry. 5 times a week, for 6 weeks. 1 Ju., 11 Sc., 1 Law, 3 S. S. Total 16.

S2. Mr. ASHTON. — Differential and Integral Calculus. 5 times a week, for 6 weeks. 1 Ju., 3 Sc., 6 S. S. Total 10.

Professor D. E. SMITH (Columbia). — History and Teaching of Elementary Mathematics. 5 times a week, for 6 weeks. 10 S. S. Total 10.

#### Physics.

Messrs. McELFRESH and L. D. HILL. — Elementary Physics. 5 times a week, for 6 weeks. 29 S. S. Total 29.

Asst. Professor SABINE. — Advanced Physics. 5 times a week, for 6 weeks. 1 Gr., 1 Ju., 1 Sc., 12 S. S. Total 15.

#### Chemistry.

Dr. BAXTER, assisted by Mr. R. C. WELLS. — Elementary Theoretical and Descriptive Chemistry. 5 times a week, for 6 weeks. 12 S. S. Total 12.

Dr. BAXTER and Mr. R. C. WELLS. — Physical Chemistry. 5 times a week, for 6 weeks. 3 S. S. Total 3.

**Botany.**

- ☞ S1. Messrs. OLIVE, PLOWMAN, and DANDENO.—Lectures, laboratory work, and field work. 5 times a week, for 6 weeks.  
1 Gr., 3 Ju., 4 So., 1 Fr., 1 Sc., 1 R., 13 S. S. Total 24.
- ☞ S2. Mr. OLIVE and assistants.—Advanced Course in Morphology, etc. 5 times a week, for 6 weeks. 1 Ju., 5 S. S. Total 6.

**Geology.**

- ☞ S1. Professor SHALER and Mr. WOODMAN.—Elementary course. Lectures, laboratory, and field work. 5 times a week, for 6 weeks.  
2 Ju., 1 So., 1 Fr., 1 Sp., 5 Sc., 6 S. S. Total 16.

**Geography.**

- Mr. H. T. BURR, assisted by Mr. C. H. MORRILL.—Lectures, laboratory, and field work. 5 times a week, for 6 weeks.  
1 Ju., 1 Fr., 1 Law, 30 S. S. Total 33.

**Physical Training.**

- Dr. SARGENT and assistants.—Elementary and advanced courses in theory. 5 weeks. 127 S. S. Total 127.
- Dr. SARGENT and assistants.—Elementary and advanced courses in practice. 5 weeks. 77 S. S. Total 77.

**Historical Excursions.**

- Mr. W. E. DORMAN, assisted by Mr. G. NEWHALL.—Historical Excursions. 1 lecture and 7 excursions.

The following courses were given in the summer as part of the regular instruction of the Lawrence Scientific School:—

**Engineering.**

- 4a. Mr. TURNER.—Plane Surveying. Field work. Daily, 6 weeks.  
2 Gr., 1 Se., 16 Ju., 19 So., 4 Fr., 2 Sp., 39 Sc., 4 S. S. Total 87.
- 4c. Mr. TURNER.—Geodetic Surveying. Daily, 5 weeks.  
11 Ju., 12 So., 3 Fr., 1 Sp., 34 Sc., 1 S. S. Total 63.
- 4d. Mr. TURNER.—Railroad Surveying. Daily, 3 weeks.  
12 Ju., 11 So., 3 Fr., 33 Sc., 1 S. S. Total 60.
- 10a. Asst. Professor BURKE.—Chipping, filing, and fitting. Ninety hours.  
2 Ju., 2 So., 1 Fr., 22 Sc., 1 S. S. Total 28.
- 10b. Asst. Professor BURKE.—Blacksmithing. Ninety hours.  
2 Ju., 2 So., 1 Fr., 21 Sc. Total 26.
- 10c. Asst. Professor BURKE.—Pattern Making, etc. Ninety hours.  
2 Ju., 2 So., 1 Fr., 24 Sc. Total 29.
- 10e. Asst. Professor BURKE.—Machine-Shop Practice. Ninety hours.  
2 Ju., 2 So., 1 Fr., 24 Sc., 1 S. S. Total 30.



*Instruction provided for 1902-03.*

Among the new courses, or old courses revived, for 1902-03 the most noteworthy for number and variety are in Classical Philology. Under this head eighteen half-courses not given last year are offered for 1902-03, among them half-courses in Aeschylus and in Aristotle, conducted by Professor Goodwin. In German the coming of Professor H. S. White and the return of Professor Francke have established new courses and revived courses not given last year. In History, Professor Haskins treats Mediaeval Institutions, and Mr. Merriman Spanish History to the death of Philip II. In Government, Hon. C. S. Hamlin deals with the Administration of the Government of the United States, and F. J. Stimson, Esq., with Tendencies of American Legislation. Professor Santayana, already teaching the History of Philosophy, adds a new course in the Philosophy of History; Dr. Miller deals with Ethical Ideals of the Nineteenth Century, and Professor E. C. Moore with the History of Christian Thought since Kant. Among new courses in science, Professor Kennelly's half-course in Telegraphy and Telephony deserves special mention. Several Departments offer new graduate courses of peculiar attractiveness to small groups of advanced students.

## ADMISSION REQUIREMENTS UNDER THE NEW METHOD.

With the admission examinations of 1901 the Old Method of admission to Harvard College disappeared. The New Method was established in May, 1899, held a place beside the Old Method till the beginning of the academic year 1901-02, and now stands alone. By this time the Faculty should be able to judge with something like accuracy whether the New Method is satisfactory. To be satisfactory, it must train the candidate as well as the Old Method trained him, it must not materially increase or decrease the difficulty of admission to Harvard College, it must relieve rather than embarrass the high schools, and it must be readily adjustable to the work of the Freshman year.

Of the four questions implied in these criteria, the first is the hardest to answer. Many candidates admitted by the New Method have had substantially the same training that they would have had under the Old — Greek, Latin, Mathematics, English, either German or French, History, and Physics. The new subjects, Physiography, Anatomy, Astronomy, and Meteorology, as at present taught in schools when taught at all, attract so few candidates that they

are not yet significant. The chief difference of training in the two methods is for those candidates who do not offer Greek: under the Old Method such candidates made up for Greek by additional Mathematics; under the New Method they make up for it by any subjects covering the same total number of points in the admission scheme. The Old Method recognized two sorts of intellectual discipline (corresponding to two great orders of intellect), the linguistic or literary and the mathematical: to the first it gave more weight; but it conceded that some deficiency in the first might be balanced by an additional amount of the second. Its advocates believed that modern languages and natural science, as at present taught in schools, do not provide firm training for the mind, and that the fault is not wholly in the teaching but lies partly in the unsettled character of the subjects themselves. The New Method proclaims that of any two studies efficiently taught for the same length of time one is about as good as another and deserves equal recognition in a scheme of examinations. It is too early to judge whether students admitted with neither Greek nor Trigonometry and Solid Geometry are on the whole weaker than those admitted with either or with both; too early to judge whether the training of the new subjects can match the training of the old. Yet these are among the questions that rouse in conservative minds a grave apprehension.

Though the question whether the New Method is harder for the candidate or easier, is still debated, yet by far the stronger testimony declares it harder. The total number of examination hours and subjects is diminished slightly; but the diminution, schoolmasters affirm, is more than offset by the increase in the difficulty of individual subjects. As soon as a general change in the admission scheme was proposed, each Department of the Faculty represented therein saw a chance of improving the position of its own subject; the Faculty as a whole hesitated in rejecting the propositions of experts; and the result is what most schoolmasters regard as a decided increase in the total amount of work required. The increase in Elementary Latin alone, though it makes the new requirement better than the old, and seems to demand none too much Latin for the college man who has no Greek, is to many candidates a burden.

In relief for what are called English High Schools and for other high schools that cannot conveniently teach Greek, the New Method makes its strongest claim. Nor is the advantage to the schools only; for the more natural connection between Harvard College and the high schools encourages the most promising boys throughout the country in coming to the College. Thus far it cannot be said that

the increased difficulty in single subjects repels as many boys as the wider option attracts, since the Freshman Class this year is much larger than ever before.

In adjustment to the work of the Freshman year the New Method is plainly inferior to the Old. An essential part of the old scheme was a simple and practical relation between admission studies and college studies in the same subjects. Since every admission study either led directly to a college course, prescribed or elective, or was the rough equivalent of such a course, the question what courses were open to a newly admitted student in the subjects he had offered for admission was simple:—

- Elementary English led to English *A*.
- Elementary Greek led to Greek *A*.
- Elementary Latin led to Latin *A*.
- Elementary German was roughly equivalent to German *A*, and led to German *C*.
- Elementary French was roughly equivalent to French *A*, and led to French *1c* or *1a*.
- Elementary History led (imperfectly) to History *1*.
- Elementary Algebra led to Mathematics *D*.
- Plane Geometry led to Mathematics *E*.
- Elementary Physics was equivalent to Physics *B*, and led to Physics *C*.
- Advanced Greek was equivalent to Greek *A*, and led to Greek *B* or *C*.
- Advanced Latin was equivalent to Latin *A*, and led to Latin *B* or *C*.
- Greek Composition was equivalent to Greek *F*, and led to Greek *E*.
- Latin Composition was equivalent to Latin *F*, and led to Latin *E*.
- Advanced German was equivalent to German *C*, *1a*, or *1b*, and led to German *2a*.
- Advanced French was equivalent to French *1c* or *1a*, and led to French *2c* or *2a*.
- Logarithms and Trigonometry was equivalent to Mathematics *A*.
- Solid Geometry was equivalent to Mathematics *E*.
- Analytic Geometry was equivalent to Mathematics *B*.
- Advanced Algebra was equivalent to Mathematics *D*.
- Advanced Physics was equivalent to Physics *C*.
- Advanced Chemistry was equivalent to Chemistry *B*.

In spite of some unevennesses, the simple relation between admission studies and college studies was distinctly helpful. In the New Method, however, such a relation is not steadily maintained: *Physiography* and *Meteorology* are equivalent respectively to *Geology* and *Geography A<sup>1</sup>* and *Geology* and *Geography B<sup>2</sup>*; but neither *Astronomy* nor *Advanced History* has a distinct relation to any course taught in College. The requirement for *Advanced History* strikes the ordinary mind as an extreme case of unnecessary complication. In *Elementary History* the candidate may offer either the *History of Greece and Rome* or that of *England and America*; in *Freshman elective work History 1*, the course designed especially

for Freshmen as a kind of gate to all other courses in History, is Mediaeval and Modern European History. The Advanced History of the admission scheme stands in an uncomfortable relation to both the Elementary History and the college elective work. It not only need not be in the same field as the Elementary; it cannot be in that field: Advanced History of Greece and Rome may be offered by those candidates only who offer Elementary History of England and America; Advanced History of England and America by those only who offer Elementary History of Greece and Rome. The relation of Advanced History to elective courses in College is even more confusing. There are four kinds of Advanced History: he who passes the examination in (1) may count his first elective course in Greek or Roman History as a half-course only; he who passes in (2) may count his first elective course in American History as a half-course only; he who passes in (3) may count History 1 as a half-course only; what he who passes in (4) may or may not count depends presumably on what field he covers in (4), but as nobody (except Radcliffe candidates) passes in (4) the question is not yet practical. The mere book-keeping of a scheme so involved is a solid argument against the scheme; the confusion in the minds of candidates and teachers is a more solid argument. Advanced History (4) is at first sight inviting; but it is too hard for a boy without more counsel than the College gives him, and too hard for a teacher who is not a specialist in History. No study in which a bright boy cannot be prepared by an intelligent and experienced all-round tutor is fit for a scheme of admission to the Freshman class; nor any study that stands in a tangled relation to school work on one side, or college work on the other. When we consider the admission scheme in Advanced History, we feel the force of the old saying that whoever can understand the scheme of admission requirements ought *ipso facto* to be admitted.

Almost as complicated as the requirements in Advanced History are the requirements in English, and the rules, closely connected with them, which fix the amount of English Composition prescribed for any one student at college. In both History and English our scheme needs simplification.

Experience in the College Office has led me to believe that the New Method of Examinations for admission to Harvard College is not so good as the Faculty meant it to be. I believe, also, that the Faculty may well consider again the relation of the Harvard admission examinations to the examinations conducted by the College Entrance Examination Board.

CASES OF DISCIPLINE THAT CONCERN MORE THAN ONE  
ADMINISTRATIVE BOARD UNDER THE FACULTY OF  
ARTS AND SCIENCES.

As the result of a "case of discipline" in which a graduate and an undergraduate were involved and were dealt with on different principles, the Faculty voted in December, 1901, "That serious cases of discipline affecting students of more than one of the Departments under the control of the Faculty shall be dealt with by consultation and agreement between the Administrative Boards of those Departments; in case of disagreement they shall be reported to the Faculty." No case of disagreement has since been reported.

THE LAWRENCE SCIENTIFIC SCHOOL AND THE COLLEGE.

For some years the Lawrence Scientific School occupied two seemingly incompatible positions: it was a professional school of high grade, fit to attract college graduates and having one immense advantage over polytechnic schools in general because of its university background; and it was also a school in which a number of ill-trained persons who could not or would not prepare themselves for Harvard College might get, either as regular or as special students, a foothold, if only temporary, in the University,—taking almost the same studies that they would have taken in Harvard College. This state of affairs came about through various causes. In 1886–87 the School had shrunk to fourteen students and needed the strength that comes of increased membership. Through a vigorous administration combined with a liberal policy of admission it grew so rapidly that it could soon afford to send away worthless students as freely as it gave to presentable candidates the opportunity of proving that they deserved its privileges. When its numbers had increased and its students mingled freely with college students in the social and athletic life of the University, its admission requirements, which could be met with considerably less study than those of the College, attracted many boys who were in no sense scientific but who wished for life at the University, and secured it most readily at the Scientific School. These boys often proved themselves useful members of the University: but they really belonged in Harvard College rather than in the Scientific School; and not infrequently, when they had covered at the School those College admission requirements which they had not covered earlier, they transferred themselves to the College. As the President of the University and the Dean of the

Scientific School have pointed out in earlier reports, the diminution of the group of students in "General Science" will relieve the School of many persons who make its scientific character less distinct and will increase its efficiency in training men for scientific professions. This diminution, the gradual result of the gradual increase in the admission requirements of the School, is going on in the healthiest way, with a more than counterbalancing increase in the other and truly scientific groups.

#### CHANGES IN THE REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS.

On the first of October, 1901, the President communicated to the Faculty the wish of the Overseers "to have inserted in the Catalogue a clear statement of the conditions upon which the various degrees given in a course can be obtained." To meet this wish a brief statement of existing practices in the granting of the A.B. degree was drawn up by Mr. Richard Cobb, then Corresponding Secretary of the University, was adopted with slight changes by the Faculty, and was inserted in the University Catalogue for 1901-1902. On January 9, a resolution of the Board of Overseers was transmitted to the Faculty by the President and Fellows:—

"The Overseers are gratified to find in the Catalogue a clearer statement of the requirements for the degree of Bachelor of Arts; and they await with interest and sympathy the report of the Faculty which will recognize in a more formal way the system by which students of unusual diligence or marked mental capacity may obtain the degree of Bachelor of Arts in three years."

The words "and sympathy" seemed to point to a more favorable view of the three-year degree than the Faculty had understood to prevail among the Overseers. Early in February the Dean of the Faculty (Professor C. L. Smith) moved—

"That a committee be appointed to draw up a statement of the requirements for the degree of Bachelor of Arts on the following conditions:—

"1. The work required for the degree shall be the same in amount and quality whether the degree be taken in four years or in three years.

"2. The amount of college work required for the degree shall be the same as at present.

"3. The quality of the college work required for the degree shall be somewhat higher than is now required for the four-year degree."

At the next regular meeting of the Faculty this motion was passed, except for the word *somewhat*. This word was provisionally amended to *decidedly*; but both words were finally discarded.

The new statement (adopted May 27, 1902) is as follows:—

#### REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS.

In order to be recommended for the degree of Bachelor of Arts, a candidate must have passed in studies amounting to sixteen courses, together with such work in English as may be prescribed for him; making a total of seventeen or seventeen and a half courses, as the case may be. He must, moreover, have attained a grade above *D* in at least two thirds of all the work done by him in Harvard University in satisfaction of the requirements for the degree.

A student in Harvard College must take, in each academic year, at least four courses, in addition to such work in English as may be prescribed for him; and (including his prescribed English) he may take six, but not more, as regular courses to be counted towards the degree. Certain studies taken in the summer may also be counted towards the degree. Accordingly, a student who enters the Freshman Class without serious deficiency may complete the requisite number of courses in four, three and a half, or three years.

A student may shorten the requisite period of residence and study by anticipating college studies at the time of his admission (see Catalogue, 1901-02, pp. 316-318); or by securing credit for work satisfactorily performed at another college (see Catalogue, 1901-02, pp. 319, 320); but no student will be recommended for the degree of Bachelor of Arts until he has completed at least one year of residence and study as a candidate for that degree; and no student admitted to the Freshman Class will be recommended for the degree until he has completed three years of residence and study.

A candidate who has fulfilled all the requirements for the degree in three years and a half may obtain, on petition, leave of absence until the following Commencement, when the degree will be conferred upon him. A candidate who has completed all the requirements at the end of his third year and desires to graduate without further residence may, at his own option, either receive the degree at that time, or obtain leave of absence during his fourth year and take the degree at the end of that year.

In commenting on this statement the public press has announced a change of University policy much more radical than the facts warrant. So far from being easier to do the work required for the degree whether in three years or in four, it is a little harder, since the number of courses is the same and the grades demanded are somewhat higher. For a long time the Faculty has not required a fourth year's residence or study from the students who in three years have done the amount of work required in four. The reason why few of

these students (who last year numbered about a hundred) have actually received diplomas at the end of three years is twofold: most of them have preferred to remain forever members of the classes in which they entered college and consequently to wait a year for their diplomas; and many of them have not won the *cum laude* record without which the Faculty, though requiring of them neither more work nor longer residence, would not recommend them for the degree at the end of the third year. The essential difference between the new plan and the old is expressed by the last sentence in the statement of the new plan. The *cum laude* requirement for the three-year man is abandoned: the three-year man is treated like the four-year man; and if he waits a year for his degree he waits to please himself and not the Faculty.

The new plan calls for somewhat better work than the old; and in discussing the new plan the Faculty raised the question whether it could fairly demand better grades without better teaching. This question led to discussion of the lecture system in large elective courses, and led further to the appointment of a committee which should consider ways of making college instruction more efficient.

#### LACK OF GUIDANCE FOR FRESHMEN.

For a Freshman when first he faces the elective system the danger of mistakes is grave. His home advisers seldom know the College; his college adviser seldom knows him. Moreover, his college adviser may well hesitate to discriminate among studies which the Faculty declares to be of equal value; or he may believe it his duty to recruit his own specialty; or he may believe it his duty to keep clear of what anybody could construe as recruiting his own specialty: in the matter wherein a Freshman first needs advice the adviser is neither qualified nor permitted to advise. The burden rests on the Freshman himself; and though it is well for him to take responsibility, for this particular responsibility he may be too immature and short-sighted. A suggestion to the Faculty that specimen programmes of study might help both students and advisers found little favor last year in the Faculty as a whole. It may well be considered, however, by the committee whose appointment I have just mentioned, "the Committee on Improving Instruction."



## RELATIVE COST OF LARGE AND SMALL COURSES.

One fault in the undergraduate lecture courses is their small supply of assistants who shall keep track of the students individually; and one reason for this small supply is the high cost of elective courses provided for very small numbers of students. Though these courses for the few are of immense value to the University, and though without them it could scarcely be a University, I question whether it can rightly maintain many of them at a loss of efficiency in the large elective courses which belong more especially to Harvard College. I suspect that if the receipts and expenditures of Harvard College could be disentangled once more from those of the Graduate School and the Scientific School, the process would reveal some sacrifices of the College to its neighbors; and I believe with my predecessor that the time has come for peculiar attention to the welfare of Harvard College. I write as one who holds that the College is the very heart of the University, and that "out of the heart are the issues of life"; and I write the more earnestly because I see some American universities pushing blindly out from under them the college props on which they stand.

L. B. R. BRIGGS, *Dean.*

## THE COLLEGE.

TO THE PRESIDENT OF THE UNIVERSITY : —

SIR, — I have the honor to submit to you my report on the condition of Harvard College for the academic year 1901–02.

The total number of students at the beginning of the year was nineteen hundred and eighty-three, divided as follows : —

Seniors . . . . .	346
Juniors . . . . .	412
Sophomores . . . . .	533
Freshmen . . . . .	<u>551</u>
Total number of Undergraduates . . . . .	1842
Special Students . . . . .	<u>141</u>
Total . . . . .	1983

During the year the College lost by death the following students : —

- George Irving Hayes, '02 . . . . Died March 9, 1902.
- Thomas Gordon Wheelock, '05 . . Died April 20, 1902.
- Ralph Samuel Hersey, '05 . . . . Died June 25, 1902.
- Henry Coleman Farrington, '05 . . Drowned July 17, 1902.
- Edward Leander Wood, '04 . . . . Accidentally shot September 20, 1902.

At Commencement four hundred and twenty-seven students, as against four hundred and fifty-nine in 1901, received the degree of Bachelor of Arts. Of these, three hundred and eight were registered as Seniors, as against three hundred and sixty-nine in 1901.

The registration in 1902, compared with the figures of the preceding year, shows a net loss of nine : —

	Gain.	Loss.
Seniors . . . . .	..	42
Juniors . . . . .	32	..
Sophomores . . . . .	..	3
Freshmen . . . . .	14	..
Special Students . . . . .	..	<u>10</u>
	<u>46</u>	<u>55</u>
		46
Net loss . . . . .		9

The notable loss, that of forty-two from the Senior Class, is apparently due to the increased number of students who have completed the requirements for the degree of Bachelor of Arts at the end of three years and have asked for leave of absence for the fourth year.

The next table shows the registration of those who received degrees in 1901 and 1902, but who were not registered as members

of the Senior Class. In 1901 there were ninety such candidates ; in 1902 one hundred and nineteen : —

	1901.	1902.
On leave of absence all the year . . . . .	18	47
On leave of absence first half-year . . . . .	1	..
On leave of absence second half-year . . . . .	..	15
Graduate students . . . . .	18	9
Registered in Law School . . . . .	27	20
Registered in Medical School . . . . .	7	7
Registered in Dental School . . . . .	1	..
Registered in Divinity School . . . . .	..	1
Registered in Scientific School . . . . .	2	7
Special Students . . . . .	3	1
Registered in Junior Class . . . . .	8	6
Registered in Sophomore Class . . . . .	8	6
Registered in Senior Class of 1900 . . . . .	2	..
	90	119

In this table the students given leave of absence for the year or either half thereof, and those who were registered in the Law, the Medical, the Dental, or the Divinity School may be regarded as having practically completed the requirements for the degree of Bachelor of Arts, or as being within a course and a half of the attainment thereof, and desirous of taking advantage of the completion of the requirements to begin work elsewhere. No enumeration is made of students who had completed, or nearly completed, the requirements in three years, but who remained as members of the Senior Class, taking work which, in many cases, is ultimately counted for the degree of Master of Arts. It will be noted that there are fifty-four students in the first class in 1901, ninety in 1902, — an increase from eleven and three-quarters per cent. in 1901 to twenty-one per cent. in 1902. Most noteworthy, however, in this table is the increase in the number of men who have severed their connection with the University. In 1901 nineteen men took leave of absence without registering in any other Department of the University ; in 1902, sixty-two.

The losses and gains in the three younger classes between November, 1901, and November, 1902, are shown in the following tables : —

	November, 1901.	Loss.	Gain.	November, 1902.
Class of 1903 . .	(Juniors) 412	121	89	(Seniors) 380
Class of 1904 . .	(Sophomores) 533	177	64	(Juniors) 420
Class of 1905 . .	(Freshmen) 551	107	136	(Sophomores) 580
		405	289	
Net loss in the three classes between Nov., 1901, and Nov., 1902 . . . 116 (48 less than in 1901)				

	Class of 1903.	Class of 1904.	Class of 1906.	Total for three classes.
<b>LOSSES.</b>				
Left College before the end of the year . . .	7	19	25	51
Left College at the end of the year . . . . .	106	36	18	160
Were "dropped" and left College . . . . .	2	5	4	11
Entered a lower class . . . . .	5	74	39	118
Entered a higher class . . . . .	1	43	21	65
<b>Total loss . . . . .</b>	<b>121</b>	<b>177</b>	<b>107</b>	<b>405</b>
<b>GAINS.</b>				
From higher classes . . . . .	10	6	76	92
From lower classes . . . . .	44	21	0	65
Newly admitted . . . . .	35	37	60	132
<b>Total gain . . . . .</b>	<b>89</b>	<b>64</b>	<b>136</b>	<b>289</b>
<b>Net loss . . . . .</b>	<b>32</b>	<b>113</b>	<b>0</b>	<b>116</b>
<b>Net gain . . . . .</b>	<b>0</b>	<b>0</b>	<b>29</b>	<b>0</b>

As usual, the most noteworthy loss is in the Sophomore Class, which is increased at the beginning of each year by students obliged to register therein under the rule requiring them to remove their admission conditions before they may be promoted to the Junior Class, and depleted at the end of the year (when the Sophomore Class becomes the Junior Class), first, by the promotion to a higher class of the men who have been held in the Sophomore Class on account of admission conditions which they have at last succeeded in removing, and, second, by the operation of the law already mentioned. The number of men leaving at the end of the Junior year, one hundred and six, shows an increase of six over last year. The number of men newly admitted to this class (now [1902-03] the Senior), thirty-five, shows an increase of fifteen over the number admitted to the Class of 1902 at the corresponding time. The number newly admitted to the three classes is one hundred and thirty-two, a gain of thirty-eight over the number admitted the preceding year.

The next table shows the losses and gains in the number of Special Students since December, 1901. The total number at the beginning of the year 1902-03 shows a net loss of eighteen, due, it is probable, to the Committee's increased strictness in scrutinizing the training and the purpose of the candidates. During the last three years, many more candidates than heretofore seeking admis-

sion as Special Students have been advised to enter preparatory schools :—

In attendance, December, 1901 . . . . .	141
Left College before the end of the year . . . . .	20
Left College at the end of the year . . . . .	56
Entered a College class . . . . .	25
Total loss . . . . .	<u>101</u>
Reëntered College as Special Students, 1902 . . . . .	40
Newly admitted . . . . .	88
Total . . . . .	<u>128</u>
Net loss . . . . .	18

The Freshman Class of 1902-03 shows an unexpected gain of fifty-eight members :—

	1901-02.	1902-03.
Admitted by examination . . . . .	459	524
Admitted by examination before . . . . .	37	34
From a higher class . . . . .	52	42
“ the Special Students . . . . .	1	4
“ the Lawrence Scientific School . . . . .	1	4
Total . . . . .	<u>550</u>	<u>608</u>

This table shows that the Class of 1906 received by examination in 1902 sixty-five more members than did the Class of 1905 in 1901; that the number of students who entered, having passed their examinations before 1902, was three less than the number thus admitted in 1901; that the Class of 1905 contributed ten less to the Class of 1906 than did the Class of 1904 to the Class of 1905; in short, that proportionately the increase in the class over the Class of 1905 is due more to students admitted by examination than by dropping from another class.

The following table shows the number of students transferred from the Lawrence Scientific School to a College class at the beginning of the academic year 1902-03 :—

Freshmen . . . . .	4
Sophomores . . . . .	7
Juniors . . . . .	5
Seniors . . . . .	3
Total . . . . .	<u>19</u>

The gradual raising of the requirements for admission to the Scientific School, which in 1903 will be the same in number of points as for admission to the College, has made transference from the former to the latter much easier than heretofore for a student who

has once gained admission to the School, and it is likely that hereafter the number of students transferred from the School to the College in the first years of their university life will be larger than the number transferred from the College to the School. Further evidence of this tendency is given in the records of the admission examinations. Students who intend to take up a scientific profession conclude that they need a liberal training before entering upon their professional studies, and, accordingly, they seek admission to the College. On the other hand, the number of college students who take advantage of the plan whereby a student after three years in the College may register in the Scientific School and complete in two years more the requirements for the degree of Bachelor of Science, receiving the degree of Bachelor of Arts at the end of his fourth year and that of Bachelor of Science at the end of his fifth, steadily grows. If inquiries concerning this plan indicate an intention to follow it, the number of such men resorting to the School in the next few years should show a large increase.

Thirty-three candidates who took in June some of their Final Examinations for admission, intending to postpone the remainder until September, did not complete this examination in September: two of these were transferred to the Lawrence Scientific School; of the remaining thirty-one, eight passed in so few subjects that they were obliged to take all of their examinations over again in September; and two, who might have gone on, preferred to try all their examinations again in order to secure a better record. Eighteen rejected in June took their examinations again in September, and thirteen who registered as Postponing Candidates but who passed in a sufficient number of points to entitle them to admission were allowed to change their registration, and received an admission certificate. Nine who took examinations for Harvard College were later admitted to the Lawrence Scientific School, and nine who had been admitted to the Scientific School were afterward admitted to Harvard College. One Preliminary Candidate was allowed to become a Final; six who presented themselves as Final Candidates were allowed, after the examinations, to count a part of the examinations they had passed for a Preliminary Certificate. Seven Preliminary Candidates, who took their examinations for Harvard College, became candidates for the Scientific School.

Six hundred and fifty-seven candidates, thirty-nine more than in 1901, took Final Examinations. Of the six hundred and fifty-seven, four hundred and seventy-three had Preliminary Certificates; sixty-three divided the examinations between June and September; sixty-

three took all their examinations in June; forty-four took all in September; fourteen who had a Preliminary Certificate divided their Final Examination between June and September in accordance with the new rule of the Faculty:

	Admitted.	Admitted "Clear."	Rejected.
June . . . . .	474	221	38
September . . . . .	121	20	24
Total . . . . .	595	241	62

The percentage of June candidates admitted clear is slightly less than the percentage so admitted last year; on the other hand, that of September candidates admitted clear increases from less than one-tenth last year to one-sixth this year.

Of the six hundred and fifty-seven candidates, four hundred and sixty-eight offered ancient history rather than modern; ninety-four modern rather than ancient; sixty-six both ancient and modern; fourteen ancient and advanced European; one modern and advanced European, and fourteen neither. From the advanced studies Latin and Greek composition and analytic geometry disappear. Latin as usual holds the first place; French regains the second place, last year held by Greek; German holds fourth place, but is separated from Greek by twenty-four per cent. History takes precedence of all the scientific subjects and of two of the mathematical. The difference between the choices of languages and the choices of mathematics and science is striking: of the former there were one thousand four hundred and sixteen; of the latter, two hundred and fifty-four.

1900.	1901.	1902.
1. Latin.	Latin.	Latin.
2. French.	Greek.	French.
3. Latin Composition.	French.	Greek.
4. Greek.	Latin Composition.	German.
5. Greek Composition.	German.	Log. and Trig.
6. German.	Greek Composition.	History.
7. Solid Geometry.	Log. and Trig.	Solid Geometry.
8. Log. and Trig.	Solid Geometry.	Algebra.
9. Algebra.	Algebra.	Astronomy.
10. History.	History.	Physics.
11. Analytic Geometry.	Physics.	Meteorology.
12. Physics.	Analytic Geometry.	
13. Astronomy.	Meteorology.	
14. Meteorology.		

The next table gives the details on which the foregoing table is based:—

Number of candidates offering	1900.	1901.	1902.
	Per cent.	Per cent.	Per cent.
Advanced Greek . . . . .	380 60.	319 51.62	317 48.25
Advanced Latin . . . . .	550 85.	489 79.13	541 82.34
Advanced German . . . . .	157 24.26	123 19.9	157 23.90
Advanced French . . . . .	397 61.	259 41.91	401 61.04
Advanced History . . . . .	36 5.56	48 7.77	82 12.48
Logarithms and Trigonometry	88 13.60	101 16.34	97 14.76
Solid Geometry . . . . .	93 14.37	82 13.27	77 11.72
Advanced Algebra . . . . .	51 8.	49 7.93	71 10.81
Advanced Physics . . . . .	8 1.23	7 1.13	2 .30
Astronomy . . . . .	7 1.08	0 .00	6 .91
Meteorology . . . . .	4 .61	2 .32	1 .15

The next two tables show, for each study, the percentage of failure (*A*) in the complete records of the candidates, including the records of their successful Preliminary Examinations, and (*B*) in their records at Final Examinations only:—

( <i>A</i> )	1897.	1898.	1899.	1900.	1901.	1902.
<b>ELEMENTARY STUDIES.</b>						
English . . . . .	10.9	8.7	9.6	10.2	9.42	6.25
Greek . . . . .	5.4	7.86	10.6	4.	3.18	3.16
Latin . . . . .	4.5	6.75	4.65	6.	3.91	5.91
German . . . . .	24.9	17.07	22.97	17.85	16.67	17.82
French . . . . .	6.2	3.54	6.65	7.6	7.05	7.71
History (Ancient) . . . . .	9.09	9.41	5.	8.2	10.46	12.14
History (Modern) . . . . .	17.1	7.	10.	7.44	16.54	16.67
Algebra . . . . .	16.04	14.56	16.55	14.	14.97	10.44
Geometry . . . . .	..	..	..	24.	7.06	13.83
Plane Geometry . . . . .	15.02	26.29	25.7	26.60	16.38	21.86
Physics (Descriptive) . . . . .	28.7	27.05	47.37	27.67	22.45	..
Physics (Experimental) . . . . .	16.9	12.65	13.53	18.44	17.07	17.97
Chemistry . . . . .	16.1	15.29	18.48	12.	10.82	6.90
Physiography . . . . .	..	..	..	11.	33.33	64.29
Anatomy . . . . .	..	..	..	20.	50.	27.27



ADVANCED STUDIES.	1897.	1898.	1899.	1900.	1901.	1902.
	Greek . . . . .	7.5	12.5	14.28	18.16	12.96
Latin . . . . .	19.1	15.73	20.	23.45	21.74	27.36
German . . . . .	32.2	14.18	26.61	30.	31.21	31.85
French . . . . .	15.5	17.78	18.37	26.47	27.57	22.19
History . . . . .	. . . . .	. . . . .	. . . . .	41.66	45.1	35.37
Logarithms and Trigonometry . .	27.1	41.60	26.17	23.86	28.85	25.77
Solid Geometry . . . . .	33.5	26.76	20.98	22.58	27.78	41.56
Algebra . . . . .	54.9	43.14	35.	41.17	48.	56.34
Physics . . . . .	55.5	16.67	37.5	37.5	71.43	100.
Astronomy . . . . .	. . . . .	. . . . .	. . . . .	100.	.00	66.67
Meteorology . . . . .	. . . . .	. . . . .	. . . . .	50.	100.	.00

(B) ELEMENTARY STUDIES.			ADVANCED STUDIES.		
	1901.	1902.		1901.	1902.
English . . . . .	18.43	8.32	Greek . . . . .	13.21	11.40
Greek . . . . .	10.67	11.36	Latin . . . . .	22.45	29.02
Latin . . . . .	11.76	14.67	German . . . . .	35.77	36.76
German . . . . .	25.98	30.86	French . . . . .	39.53	27.73
French . . . . .	17.79	17.58	History . . . . .	47.92	36.25
History (Ancient) . .	20.41	23.16	Log. and Trig. . . .	29.7	26.88
History (Modern) . .	25.61	24.69	Solid Geometry . . .	31.33	43.24
Algebra . . . . .	32.62	21.	Algebra . . . . .	48.98	65.57
Geometry . . . . .	10.	18.57	Physics . . . . .	71.43	100.
Plane Geometry . . .	21.2	29.48	Astronomy . . . . .	.00	66.67
Physics (Descriptive) .	26.19	. .	Meteorology . . . . .	100.	.00
Physics (Experimental)	19.65	20.43			
Chemistry . . . . .	11.67	8.			
Physiography . . . .	33.33	64.29			
Anatomy, etc. . . . .	50.	30.			

In physiography, anatomy, astronomy, meteorology, and advanced physics the great fluctuation in percentages is due to the small number of candidates offering these subjects. Of the candidates this year, fourteen offered physiography, ten anatomy, six astronomy, one meteorology, and two advanced physics.

Six hundred and twenty-four candidates (seven less than in 1901) took Preliminary Examinations; of these, four hundred and ninety-four (thirty-seven less than in 1901) received certificates:—

## NEW METHOD.

Eight points . . . . .	58
Nine " . . . . .	6
Ten " . . . . .	71
Eleven " . . . . .	7
Twelve " . . . . .	95
Thirteen points . . . . .	10
Fourteen " . . . . .	115
Fifteen " . . . . .	8
Sixteen " . . . . .	59
Seventeen " . . . . .	6
Eighteen " . . . . .	20
Nineteen " . . . . .	4
Twenty " . . . . .	17
Twenty-one points . . . . .	2
Twenty-two " . . . . .	8
Twenty-three " . . . . .	2
Twenty-four " . . . . .	2
Less than eight points . . . . .	4
Received certificates . . . . .	494
Failed . . . . .	180
Total number of candidates . . . . .	624

The next table gives the percentages of failure in Preliminary Studies. It will be observed that although the examination in descriptive physics disappears, and all candidates are now obliged to offer experimental, nevertheless the percentage of failure decreases :—

ELEMENTARY.			ADVANCED.		
	1901.	1902.		1901.	1902.
English . . . . .	34.78	33.45	Greek . . . . .	38.89	35.71
Greek . . . . .	5.81	8.78	Latin . . . . .	47.62	60.47
Latin . . . . .	23.95	31.37	German . . . . .	28.95	26.88
German . . . . .	24.34	24.48	French . . . . .	36.99	32.28
French . . . . .	16.07	19.54	History . . . . .	71.43	50.
History (Ancient) . . . . .	18.65	27.73	Log. and Trig. . . . .	33.33	31.25
History (Modern) . . . . .	27.54	30.51	Solid Geometry . . . . .	14.29	57.14
Algebra . . . . .	29.57	15.63	Algebra . . . . .	52.38	58.33
Geometry . . . . .	19.05	4.35	Physics . . . . .	100.	Not off'd
Plane Geometry . . . . .	35.55	41.02	Astronomy . . . . .	Not offered	
Physics { Descriptive . . . . .	62.5		Meteorology . . . . .	Not offered	
Experimental 26.61	21.78				
Chemistry . . . . .	13.51	5.			
Physiography . . . . .	Not offered	100.			
Anatomy, etc. . . . .	.00*	.00†			

\* Four candidates only.

† Two candidates only.

In printing statistics of "Credits" won at the examinations for admission to College, I give (A) the "Credits" won this year at Final Examinations; (B) those won this year and some earlier year by the Final Candidates of this year; and (C) those won this year at Preliminary Examinations:—

(A) ELEMENTARY STUDIES.			ADVANCED STUDIES.		
	June.	Sept.		June.	Sept.
English . . . . .	19	1	Greek . . . . .	32	1
Greek . . . . .	8	1	Latin . . . . .	29	6
Latin . . . . .	10	7	German . . . . .	25	0
German . . . . .	19	2	French . . . . .	7	3
French . . . . .	12	2	History . . . . .	0	3
History (Ancient) . . . . .	11	14	Log. and Trig. . . . .	20	0
History (Modern) . . . . .	4	5	Solid Geometry . . . . .	4	0
Algebra . . . . .	35	8	Algebra . . . . .	2	2
Geometry . . . . .	5	0	Physics . . . . .	0	0
Plane Geometry . . . . .	41	2	Astronomy . . . . .	0	0
Physics . . . . .	117	7	Meteorology . . . . .	0	0
Chemistry . . . . .	37	1			
Physiography . . . . .	2	0			
Anatomy, etc. . . . .	0	0			
	320	50		119	15

(B) ELEMENTARY.		ADVANCED.	
English . . . . .	23	Greek . . . . .	36
Greek . . . . .	134	Latin . . . . .	39
Latin . . . . .	63	German . . . . .	38
German . . . . .	71	French . . . . .	18
French . . . . .	61	History . . . . .	3
History (Ancient) . . . . .	58	Log. and Trig. . . . .	20
History (Modern) . . . . .	12	Solid Geometry . . . . .	4
Algebra . . . . .	108	Algebra . . . . .	9
Geometry . . . . .	7	Physics . . . . .	0
Plane Geometry . . . . .	84	Astronomy . . . . .	0
Physics . . . . .	144	Meteorology . . . . .	0
Chemistry . . . . .	42		
Physiography . . . . .	2		
Anatomy, etc. . . . .	0		
	804		167

(C) ELEMENTARY.		ADVANCED.	
English . . . . .	5	Greek . . . . .	0
Greek . . . . .	46	Latin . . . . .	2
Latin . . . . .	39	German . . . . .	11
German . . . . .	36	French . . . . .	11
French . . . . .	28	History . . . . .	0
History (Ancient) . . . . .	25	Log. and Trig. . . . .	2
History (Modern) . . . . .	5	Solid Geometry . . . . .	0
Algebra . . . . .	94	Algebra . . . . .	1
Geometry . . . . .	5	Physics . . . . .	0
Plane Geometry . . . . .	20	Astronomy . . . . .	0
Physics (Experimental) . . . . .	22	Meteorology . . . . .	0
Chemistry . . . . .	8		
Physiography . . . . .	0		
Anatomy, etc. . . . .	0		
	383		27

Solid geometry, which in the first draft of the new scheme of admission requirements disappeared as an independent subject, has been, by vote of the Faculty, retained among the subjects for admission to Harvard College, to count as one advanced point.

During the year the Committee on Admission Examinations considered the question of allowing a division of the Preliminary Examination between two years. After the Chairman had corresponded with the headmasters of various schools, the Committee decided that on account of the differences of opinion among teachers it was inexpedient to allow such a division. The Committee, however, recommended to the Faculty, which adopted the recommendation, that with the approval of the principal or (in case the candidate has attended no school in the year preceding his Final Examination) with the approval of a responsible tutor, a candidate holding a Preliminary Certificate may divide his Final Examination between June and September. This division is of great service to a candidate who holds a Preliminary Certificate for but a few points. Under the old system such a candidate was frequently unprepared to take all of his Final Examinations in June, and accordingly carried over the whole body of work until September, a burden which was not unlikely to leave him exhausted after the examinations and unfitted to take up his College duties. With the present arrangement the burden is lightened, and a candidate enters College much better prepared to work effectively.

The members of the Administrative Board for the year 1901-02 were: Professors Briggs, Willson, C. P. Parker, Gross, Grandgent, Gardiner, Coolidge, Johnson, Ward, Gulick, and Woodworth; Messrs. Cram, F. N. Robinson, C. H. C. Wright, Cobb, Palache, and Whittemore.

During the year four students were suspended for dishonesty in connection with written work, and two for taking an unauthorized vacation. One student was dismissed for cheating at an examination. On unanimous recommendation of the Board, the Faculty voted to re-admit to Harvard College at the beginning of the present academic year a student dismissed in 1897 who had given evidence of good work since his dismissal. Four students withdrew under pressure. The Board closed the probation of twelve,—one Senior, one Sophomore, and ten Freshmen—for neglect of work. Of the ten Freshmen, five had been dropped from a higher class and were, therefore, on probation from the beginning of the year. Of the other five, four were placed on probation early in the year on account of unsatisfactory work. At the Mid-Year Examinations their work showed no improvement, and their probation was closed. The fifth was placed on probation after the Mid-Years, and his probation was closed at the end of April. In no case was a student refused hope of return in case he should show that he had worked effectively elsewhere, and, if allowed to rejoin the College, would work well here. Four of the ten, by passing examinations in June and September, won standing which enabled the Board to allow them to register provisionally with the Sophomore Class.

On recommendation of the Administrative Board the Faculty adopted a new rule in regard to dropped students in Harvard College, whereby such students who, at the end of the first half-year, have made up their deficiencies besides doing satisfactorily the amount of work regularly required in the first half-year, may be restored to their original classes by vote of the Administrative Board. This rule, although it affects but a few students, is an incentive to better work on their part, for the desire to be registered with their original class is strong, and the chance to be restored before the end of the year is highly prized. The Board may well consider whether an extension of the rule to apply to students who give good evidence of regaining their standing at the end of the year is not desirable.

The Dean of the Faculty has pointed out in his report the change in the requirements for the degree of Bachelor of Arts. A careful examination of the details of the new statement of the requirements shows that the change, far from being so radical as most published

CLASS.	NAME.	SCHOLARSHIP.	HOME.	SCHOOL.
'03	John Mead Adams . . . . .	Price Greenleaf . . . . .	Cambridge . . . . .	Reading High School.
'02	Edwin DeTurck Bechel . . . . .	" . . . . .	Calcium, Pa. . . . .	High School, Reading, Pa.
'04	Edward Solon Bryant . . . . .	Farrar . . . . .	Everett . . . . .	Everett High School.
'02	Alfred Munson Butler . . . . .	John Harvard . . . . .	Worcester . . . . .	Worcester High School.
'02	Merrill Edwin Champion . . . . .	Bowditch . . . . .	Greenwood . . . . .	Wakefield High School.
'02	Walter Harold Clafin . . . . .	Ruluff Sterling Choate . . . . .	West Newton . . . . .	Newton High School.
'03	Elmer Elbert Craig . . . . .	John Harvard . . . . .	Philadelphia, Pa. . . . .	University of Pennsylvania.
'02	Alfred Mitchell Dame . . . . .	Bowditch . . . . .	Cambridge . . . . .	Lynn Classical High School.
'02	Cecil Thayer Derry . . . . .	William Samuel Eliot . . . . .	" . . . . .	Cambridge Latin School.
'02	Arthur Stone Dewing . . . . .	Matthews . . . . .	" . . . . .	Cambridge English High School.
'03	Roger Ernst . . . . .	John Harvard . . . . .	Jamaica Plain . . . . .	Hopkinson's School, Boston.
'03	James Alfred Field . . . . .	" . . . . .	Boston . . . . .	Milton Academy.
'04	Francis Howard Fobes . . . . .	" . . . . .	Lexington . . . . .	Phillips Academy, Andover.
'02	George Shannon Forbes . . . . .	Price Greenleaf . . . . .	Roxbury . . . . .	Roxbury Latin School.
'04	William Withington Gallagher . . . . .	Bowditch . . . . .	Braintree . . . . .	Thayer Academy.
'02	Arthur Eldredge Goddard . . . . .	Price Greenleaf . . . . .	Brockton . . . . .	Brockton High School.
'03	Joseph Isaac Gorfinkle . . . . .	Bowditch . . . . .	Chelsea . . . . .	Chelsea High School.
'02	Robert Montravelle Green . . . . .	John Harvard . . . . .	Boston . . . . .	Boston Latin School.
'02	George Clarkson Hirst . . . . .	Richard Augustine Gambrell, Palfrey Exhibition . . . . .	} Philadelphia, Pa. . . . .	Temple College, Philadelphia, Pa.
'04	Guerdon Stearns Holden . . . . .	John Harvard . . . . .	Glenville, O. . . . .	Worcester Academy.
'02	John Haynes Holmes . . . . .	" . . . . .	Malden . . . . .	Malden High School.
'03	Granville Johnson . . . . .	" . . . . .	Boston . . . . .	Volkmann's School.
'02	Venice John Lamb . . . . .	Price Greenleaf . . . . .	Youngstown, O. . . . .	Rayen High School, Youngstown, O.
'03	George Bartlett Laubenstein . . . . .	John Harvard . . . . .	La Grange, Ill. . . . .	Lyons Township High Sch., LaGrange,
'02	George Randall Lewis . . . . .	Price Greenleaf . . . . .	Wollaston . . . . .	Quincy High School. [Ill.]

CLASS.	NAME.	SCHOLARSHIP.	HOME.	SCHOOL.
'04	Augustus Locke . . . . .	Class of 1802 . . . . .	North Adams . . . . .	Drury High School, North Adams.
'03	Dean Putnam Lockwood . . . . .	Price Greenleaf . . . . .	Chicago, Ill. . . . .	Smith Academy, St. Louis, Mo.
'04	Ross Watt Lynn . . . . .	Jacob Wendell . . . . .	Belvidere, Ill. . . . .	Rev. E. Heinemann.
'04	Robert William Magrane . . . . .	Class of 1852 . . . . .	Brooklyn, N. Y. . . . .	Pratt Institute.
'02	Edmund Morris Morgan, Jr. . . . .	" 1856 . . . . .	Youngstown, O. . . . .	Rayen High School, Youngstown, O.
'02	Arthur Stanley Pease . . . . .	Price Greenleaf . . . . .	Andover . . . . .	Phillips Academy, Andover.
'03	Herbert Thomas Poland . . . . .	Bowditch . . . . .	Roxbury . . . . .	Roxbury Latin School.
'04	Chandler Rathfon Post . . . . .	John Harvard . . . . .	Detroit, Mich. . . . .	University School, Detroit, Mich.
'02	David Reuben Radovsky . . . . .	Bowditch . . . . .	Fall River . . . . .	Durfee High School, Fall River.
'03	Augustus Loring Richards . . . . .	Price Greenleaf . . . . .	South Sherborn . . . . .	Boston Latin School.
'02	Frederick William Russe . . . . .	John Harvard . . . . .	Memphis, Tenn. . . . .	St. Paul's School, Garden City, I. I.
'03	George Stanley Stevenson . . . . .	Price Greenleaf . . . . .	Clinton, Me. . . . .	Colby College.
'03	Elijah Swift . . . . .	Bartlett . . . . .	Wollaston . . . . .	Quincy High School.
'03	Clifford Hall Walker . . . . .	Bowditch . . . . .	Cambridge . . . . .	Cambridge Latin School.
'04	Roy Smith Wallace . . . . .	" . . . . .	Freeport, N. Y. . . . .	Pratt Institute High School.
'02	Raynor Greenleaf Wellington. . . . .	John Harvard . . . . .	Roxbury . . . . .	Roxbury Latin School.

accounts have declared it, is in effect but a slight modification of the existing practice. Heretofore, in order actually to have the degree conferred upon him at the end of three years, a candidate has been required to win the degree *cum laude*: but a candidate who has in three years completed the requirements for a degree without distinction has had no further prescription of work; he could obtain leave of absence for his Senior year, and spend that year in whatever way he chose. The distinction, therefore, between the two candidates has become practically a technical one. The former could, it is true, take his degree if he wished it; but the latter has had only to live a year to receive his. Comparatively few candidates of either class, however, have asked for their degrees at the end of three years, for most have preferred, as candidates hereafter will probably prefer, to receive their degrees with the class graduating four years from the time they entered, in order that they may be associated with this class in the Quinquennial Catalogue, the reports of the Class Secretaries, and class celebrations. The present change whereby the *cum laude* requirement is abandoned is in reality, therefore, but a matter of form. On the other hand, in doing away with the technical difference between candidates of the two sorts, the Faculty has taken occasion to improve the quality of the work required from all candidates. Heretofore a candidate must have attained a grade above *D* in at least one-half of all his work; hereafter he must attain a grade above *D* in at least two-thirds. This strengthening of the requirements has also resulted in improvement in the work required each year. This is shown in the new rules for promotion, which apply to students admitted to Harvard College as Freshmen with the Class of 1905, and to all students subsequently admitted:—

In order to be promoted to a higher class at the end of any academic year, a student must have satisfied the following requirements:—

For promotion to the Sophomore Class, he must have passed in college studies amounting to not less than *three* courses, in at least *two* of which his grade is above *D*.

For promotion to the Junior Class, he must have passed in college studies amounting to not less than *seven* courses, in at least *five* of which his grade is above *D*. He must, moreover, have made up all deficiencies in his admission record.

For promotion to the Senior Class, he must have passed in college studies amounting to not less than *twelve* courses, in at least *eight* of which his grade is above *D*.



For promotion from the Freshman to the Sophomore Class, the standard remains practically as heretofore. For promotion to the Junior Class, the number of courses in which a student must have stood above grade *D* is raised from three or three and a half (depending upon the mark attained in the prescribed English of the Freshman year) to five. The amount of deficiency with which a student may be promoted to this class remains as heretofore, save that no distinction is made, as at present, in the case of a student who falls below grade *C* in his prescribed English. For promotion to the Senior Class, instead of a grade above *D* in at least four or four and a half courses (the minimum under the old rule) a student must now have a grade above *D* in at least eight courses, and he may not have a deficiency of more than a course and a half.

The number of scholars in the First Group of scholarship holders (see pp. 116, 117) is this year forty-one, as against fifty-one in 1900-01. Thirteen of these hold honorary scholarships (John Harvard) and twenty-eight scholarships with stipend, as against fifteen holding honorary scholarships and thirty-six holding scholarships with stipend in the preceding year. The percentage of holders of honorary scholarships in this group is thus slightly increased.

In the Second Group there are forty holders of honorary scholarships (Harvard College) and fifty-five holders of scholarships with stipend, as against fifty-four holders of honorary scholarships and fifty-two holders of scholarships with stipend in 1900-01, a decrease in the percentage of holders of honorary scholarships.

At the end of the academic year Harvard College met with a great loss: Le Baron Russell Briggs, for eleven years Dean of the College, resigned from that position to become Dean of the Faculty of Arts and Sciences, an appointment which, although it extended the breadth of his supervision, nevertheless loosened the firmly knit bonds that gave the students of Harvard College the peculiar privilege of calling him their own. Fortunate in the possession of such a son, the College was doubly fortunate in being able to claim his services at the time he gave them. For years the growing number of students had made the administration of the countless details of their relation to the College by so large a body as the Faculty cumbersome and wasteful. In 1890 the administration of government was re-adjusted, and the beginning of the academic year 1890-91 saw most matters of the administration of the three Departments, which had been organized under the Faculty, entrusted to Administrative Boards, and the

Faculty, as a body, free to consider the larger questions of university policy. The first year of so important a change could be called only one of experiment, the success of which could not be judged at the end of a few months. Time was needed. Twelve years of trial have shown the wisdom of the change; and to Professor Briggs, who became the head of the College Administrative Board in its second year of existence, is due the successful carrying out of the new plan. A study of the Catalogues and the records of the Administrative Board for the last eleven years gives but faintly an outline of the work he has done. In the first year of his administration the students numbered one thousand four hundred and fifty-six; in the last, one thousand nine hundred and eighty-three. While he was Dean, the University conferred the degree of Bachelor of Arts upon more than four thousand men: more than five thousand have known him as an administrative officer, and have been better men because they have known him,—a just man, tender yet clear-sighted, who in protecting the College never once forgot the individual. No one of all this army has ever felt himself neglected or without a friend. But in enduring value his services go even beyond this, for he has given a definite form to the administrative policy of the College, and set an example for all who may succeed him. The minutes of the Board show but a few of the perplexing and difficult questions with which he, as the officer whose delicate duty it was to enforce the law, has had to deal,—petitions for an exception to every rule the College has ever made, the spurring on of the lazy, the encouragement of plodders, the punishment of wrong doers;—only in the hearts of men are written the full records of his untiring patience, his boundless faith, and the sympathy that has made each man his brother.

B. S. HURLBUT, *Dean.*

## THE LAWRENCE SCIENTIFIC SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY :—

SIR,— As Dean of the Scientific School I submit the following report for the academic year 1901-02.

The number of students registered in this School in the last academic year and their distribution in the several groups and classes is indicated in the following tables.

### REGISTRATION BY CLASSES.

Class.	1900-01.	1901-02.
Fourth-Year . . . . .	69	76
Third-Year . . . . .	65	88
Second-Year . . . . .	136	141
First-Year . . . . .	155	157
Specials . . . . .	82	87
<b>Totals . . . . .</b>	<b>507</b>	<b>549</b>

### SPECIAL STUDENTS.

Number of years in attendance.	1900-01.	1901-02.
One . . . . .	53	59
Two . . . . .	14	16
Three . . . . .	10	6
Four . . . . .	5	4
Five . . . . .	0	2
<b>Totals . . . . .</b>	<b>82</b>	<b>87</b>

### REGISTRATION FOR ADMISSION EXAMINATIONS.

Year.	Preliminary.	Final.	Total.
1901 . . . . .	68	216	284
1902 . . . . .	82	175	257

### DISTRIBUTION OF STUDENTS IN FOUR-YEAR PROGRAMMES.

Programme.	1900-01.	1901-02.
Civil Engineering . . . . .	62	56
Mechanical Engineering . . . . .	64	82
Electrical Engineering . . . . .	42	49
Mining and Metallurgy . . . . .	42	67
Architecture . . . . .	26	29
Landscape Architecture . . . . .	11	9
Chemistry . . . . .	21	32
Geology . . . . .	6	5
Biology . . . . .	10	12
Anatomy, etc. . . . .	31	30
Teachers of Science . . . . .	22	21
General Science . . . . .	170	157
<b>Totals . . . . .</b>	<b>507</b>	<b>549</b>

The most notable changes in the distribution of the attendance in the several programmes are to be found in the decrease in the number registered in General Science and a considerable gain in some of the programmes of Engineering and in Mining.

It is evident that when in 1903 the examinations for admission to this School no longer differ in the amount of time required for preparation from those for admission to Harvard College, the attendance in the course in General Science will be somewhat further reduced. It appears probable, however, that this reduction will not go so far as to make it desirable to discontinue this programme. It is, indeed, likely that for some time thereafter about the present number of students will resort to it. The reasons for this resort are, in part, to be found in the convenient opportunity which this programme affords to a considerable number of students who, having entered on some one of the four-year courses in special subjects, such as Engineering, find, for one reason or another, that they do not desire to go forward to the degree in that programme. By transferring to the course in General Science these persons are able to widen their field of study, though in most instances they make the required degree of concentration of their work in the department in which they began. Thus, for instance, a number of men have of late years transferred from the programmes of Engineering to that of General Science, and in their new positions have elected to do the required advanced work by going on with some of the advanced subjects required in the programme they have left. Among the subjects demanded of those who take their degree in General Science under the supervision of the Department of Engineering are Calculus and Mechanics. Several persons who have thus obtained a modified course in Engineering have entered on professional careers in that field, and have apparently been successful in their work.

The above-described use of the programme in General Science, whereby students who are unfitted for, or who may not desire to pursue, the limited and arduous courses prescribed in the special programmes may follow a freer, yet well-selected, course of study will of itself warrant the maintenance of the system that affords such opportunities. It is, in a word, valuable as a remedy for such hardships as arise from the rigidity and strenuousness of the demands made in the several professional schemes leading to the degree. In addition to the above-mentioned service the programme in General Science is useful for the reason that it affords an opportunity for those students who desire to pursue a general elective course but

with a concentration in some field of science, all their work being chosen with the consent and carried on under the direction of expert advisers. Experience has shown that some parents and students prefer this arrangement to that of free election such as the College affords. Thus while the increase in the weight of the requirements for admission to the Scientific School will undoubtedly lessen the resort to the programme of General Science on the part of the class of students who have found it easier to enter the Scientific School than the College, it appears probable that the group will, for other reasons, continue to be useful.

It now begins to be evident that the rapid increase in the requirements for admission to this School is seriously taxing the teaching resources of the public high schools whence come the greater number of our candidates for admission to regular standing. As will be seen by reference to the list of entrance requirements the subjects commonly taught in the public high schools, viz., English, French or German, History, Elementary Algebra, Plane and Solid Geometry, make up but thirteen points or one-half of the number to be required in 1908 for admission clear of conditions. Assuming that the school provides instruction equivalent to the advanced as well as to the elementary requirement in either French or German, or the elementary in both French and German, then the number of points that school covers is fifteen. If training in the elementary and advanced requirements in both languages is provided for, the number is increased to seventeen. It may be said, however, that very few high schools afford any such extensive training in the modern languages. As for the requirement in Physics or Chemistry, a training sufficient to meet the demands of our examiners is to be had in just as small a proportion of our country high schools; so that students from those institutions cannot, in most instances, present all of the subjects which it is desired that they should bring, in order to be thoroughly prepared for the work of the first year. In addition to the above-mentioned fifteen points, even if no failure is encountered, the candidate has still to pass in studies aggregating nine points in order to be admitted "clear." These points can be most easily won, so far as labor is concerned, by passing in elementary Latin and elementary Greek, each of which counts for four points, and in some other subject counting for one point, as, for instance, Trigonometry. As the requirement now stands, it would be *possible* for a candidate to make up a total of twenty-four points in languages alone. No offering such as this, or in any considerable

measure approaching it, has been, or is likely to be, made; but the possibility indicates that the linguistic studies which may be offered for entrance are relatively excessive.

In order to adapt the list of subjects which may be offered for entrance more nearly to the instruction given in the public high schools, the Faculty of Arts and Sciences has, within a year, added to the list from which the required number of points may be made up these additional studies, viz., Civics, Economics, Architectural Drawing, and Harmony. In the opinion of those immediately concerned with the management of the Lawrence Scientific School the two first named are now sufficiently well taught in many high schools to enable students to pass suitable examinations. The fourth study, that of Harmony, though not taught in many such schools, has found a place in a considerable number, and is likely to be generally adopted. Among the reasons for adopting these new subjects for entrance, and not the least important, is that young men who enter on any of the programmes of the Lawrence Scientific School, except that in General Science, are necessarily limited during their four years of work to subjects immediately pertaining to the professions they intend to enter. It is, therefore, very desirable that they pursue in the preparatory schools some of the studies mentioned in this paragraph.

During the last academic year the new buildings designed for the service of the Departments of Engineering, Geology, and Architecture have been completed and put to use. They have proved to be admirably adapted to the several needs. There remain to be provided adequate quarters for the Department of Chemistry, which is now by far the worst-housed part of the University. Some relief of a temporary nature has been provided by the shed on the south side of Boylston Hall, but in order to make a fit provision for courses in Economic Chemistry, such as the School should offer, very much more room is needed. There is an evident demand for such instruction.

The discipline of the School continues to be satisfactory, and is easily maintained. During the year, sixty-nine students were put on probation for inadequate performance of duty. One was suspended for making a false statement. One was dismissed. During the ten years in which I have served as Dean there has been a very marked diminution in the number of serious offences. At present breaches of order are with rare exceptions limited to mere pranks. It is likely that this gain is in part due to the bettered traditions of the undergraduate body, which have been brought about by the

admirable system of the Students' Reception Committee, an association of the leading men of the upper classes who, as individuals, meet the newcomers and set them in a fair way.

There was but one death during the year, that of Louis Howard Switzer, who died of typhoid fever, in Brooklyn, N. Y., November 7th, 1901.

N. S. SHALER, *Dean*.

## ATHLETIC SPORTS.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—I respectfully submit the following report on Athletic Sports for the year 1901–02.

The number of students engaged in the various sports has been ascertained by requiring from each manager a list of the men who were candidates for his team, or who came out at the call of the captains to take part in the sports for a longer or shorter time. It is impossible to make this record perfectly accurate, on account of the failure of some students to record their names, but the error is probably not large. In the case of tennis, the names of players were taken for one week, and an average was struck for the year on the basis of money received. The number in rowing is taken from the books of the Weld and Newell Clubs.

TABLE I.

Foot-ball . . . . . 241	Hockey . . . . . 58
Base-ball . . . . . 198	Golf . . . . . 80
Rowing . . . . . 536	Fencing . . . . . 76
Track games . . . . . 160	Swimming . . . . . 62
Lawn tennis . . . . . 599	Basket-ball . . . . . 76
Cricket . . . . . 44	Shooting . . . . . 129
Lacrosse . . . . . 103	
	—
	2302

In this table, some names have been counted more than once, and the total number of separate individuals is not more than 2,050. The duplicates could not in all cases be ascertained, but it is safe to say that not less than 2,050 students obtained some form of exercise under the supervision and regulation of the Athletic Committee. The total number of students in the University was 4,142, of whom 648 were members of departments outside of Cambridge, thus leaving 3,499 within easy reach of the athletic fields. Of this number it may fairly be claimed that 58.6 per cent. were benefited to a greater or less extent by the expenditures for Athletic Sports. For the purpose of comparing these expenditures, a second table has been prepared, showing the average receipts and expenses per year for athletics during three years ending in 1894, and again during three years ending in 1902.



TABLE II. — RECEIPTS AND EXPENDITURES.

	1891-1894.		1899-1902.	
	Receipts.	Expenditures.	Receipts.	Expenditures.
University Foot-ball . . .	\$18,964.43	\$11,029.00	\$52,345.64	\$18,629.34
Freshman Foot-ball . . .	1,889.69	1,545.67	1,742.51	1,530.86
University Base-ball . . .	11,146.46	9,120.73	12,984.73	9,262.17
College Nine . . . . .	. . .	. . .	181.03	269.10
Freshman Base-ball . . .	969.83	1,102.39	1,424.02	1,114.43
University Crew . . . . .	3,863.16	7,739.67	5,552.54	6,388.30
Freshman Crew . . . . .	2,506.16	3,115.72	2,228.26	2,178.47
Newell Club . . . . .	. . .	. . .	1,253.05	2,152.50
Weld Club . . . . .	1,861.55	1,851.10	1,575.06	3,185.70
Track Team . . . . .	3,022.42	4,130.82	3,405.50	4,953.79
Lawn Tennis . . . . .	597.73	592.38	1,779.95	1,207.24
Cricket . . . . .	1,376.31	1,396.43	178.33	271.85
Lacrosse . . . . .	. . .	. . .	332.76	450.04
Hockey . . . . .	. . .	. . .	193.63	216.53
General Account . . . . .	81.04	3,684.22	2,338.33	4,780.69
Care Buildings and Grounds . . .	. . .	1,855.77	. . .	6,187.45
Permanent Additions . . .	42.17	1,601.42	1,000.00	18,630.48
<b>Totals . . . . .</b>	<b>\$45,820.45</b>	<b>\$48,765.22</b>	<b>\$88,965.39</b>	<b>\$71,358.89</b>

Care and improvement of grounds and buildings . . . . .		\$3,457.19		\$19,817.88
Amount expended on teams . . . . .		45,308.03		51,541.01
Amount expended on teams and care of property . . . . .		47,162.80		57,728.46
Students in Cambridge . . . . .	2,388		3,452	
Average per student in Cambridge, excluding improvement . . . . .	\$19.18	19.74	\$25.77	16.72

NOTE. — The general account represents the income from lockers, interest on deposits, and some other small items. The expenditures are for clerical work, insurance, fuel, etc.

The salary of the track team trainer is now paid by the Association. It was formerly paid by the Corporation.

A large deficit in 1893-94 lowers the average receipts for the three years ending in 1894 below the expenditures.

A few small, unimportant items have been omitted as they had no essential relation to athletics now : for instance, cycling, which disappeared from the accounts nine years ago ; and basket-ball, which has only recently required money.

The total receipts represent the net sum after subtracting from the gross receipts the amounts turned over to visiting teams as their share of the gate money.

TABLE III. — FOOT-BALL.

	1896-97	1897-98	1898-99	1899-1900	1900-01	1901-02
Doctors and rubbing . . . . .	\$1,562.35	\$1,162.16	\$1,135.85	\$983.75	\$1,487.45	\$1,346.50
Expense of games . . . . .				873.75	908.30	1,328.68
Labor on grounds . . . . .	1,624.65	594.56	1,433.80	945.77	348.24	1,454.58
Miscellaneous expense . . . . .	304.17	238.61	328.06	182.62	78.17	553.48
Printing . . . . .	349.45	165.65	180.24	231.60	229.56	348.97
Outfits and supplies . . . . .	2,212.73	2,835.16	2,534.86	2,849.98	3,209.62	4,109.95
Trainers and coaches . . . . .	882.69	875.70	946.41	1,173.66	1,842.45	1,645.76
Training table . . . . .	1,632.67	2,378.33	1,854.61	2,106.64	2,469.78	2,965.96
Travel and hotel expense . . . . .	2,754.09	2,105.75	1,825.91	2,770.79	1,750.80	2,691.22
Total expense . . . . .	\$11,322.80	\$10,355.92	\$10,239.74	\$12,118.56	\$12,324.37	\$16,445.10
Total receipts . . . . .	\$31,413.42	\$37,106.58	\$37,985.70	\$54,387.14	\$48,446.78	\$54,243.01

TABLE IV. — BASE-BALL.

	1896-97	1897-98	1898-99	1899-1900	1900-01	1901-02
Doctors and rubbing . . . . .	\$147.65	\$285.29	\$440.40	\$350.23	\$253.00	\$468.00
Expense of games . . . . .				605.55	494.50	673.38
Labor on grounds . . . . .	1,073.87	1,830.55	1,022.19	351.75	354.22	883.74
Miscellaneous expense . . . . .	179.08	472.17	1,556.02	60.21	78.16	241.40
Pitching practice . . . . .				95.50	142.87	86.75
Printing . . . . .	264.45	232.99	256.11	237.49	186.00	346.43
Outfits and supplies . . . . .	961.98	1,191.12	1,248.07	1,086.31	1,593.24	1,938.19
Trainers and coaches . . . . .	1,124.92	720.60	1,405.50	1,056.67	1,214.00	1,286.02
Training table . . . . .	1,292.55	1,493.73	1,244.68	618.52	1,023.00	1,317.15
Travel and hotel expense . . . . .	2,706.17	195.00	3,504.80	3,910.16	2,902.24	3,933.82
Total expense . . . . .	\$7,750.57	\$6,421.45	\$10,677.77	\$8,971.39	\$8,241.23	\$11,173.88
Total receipts . . . . .	\$10,136.05	\$4,390.03	\$11,364.65	\$11,821.74	\$9,200.89	\$17,781.55

TABLE V. — ROWING.

	1896-97	1897-98	1898-99	1899-1900	1900-01	1901-02
Doctors and rubbing	\$46.05	\$88.10	\$187.45	\$398.37	\$105.00	\$696.59
Boat-house expense	1,112.52	1,392.56	1,173.28	291.66	585.50	2,606.00
Boats, oars, and launch	3,153.96	3,269.27	3,291.40	2,004.50	2,269.55	2,324.78
Special (Poughkeepsie, New London) expense	976.28	1,351.09	1,656.76	1,847.51	1,372.19	101.38
Miscellaneous expense	369.01	601.10	733.13	122.42	314.10	28.10
Printing	21.00	8.00	16.75	9.75	31.25	470.74
Outfits and supplies	428.90	345.90	428.22	416.53	521.82	930.24
Coaching expenses	1,702.12	893.50	1,190.00	496.59	595.15	980.24
Training table	105.09	253.21	230.01	145.18	..	..
Travel and hotel expense	..	..	..	..	..	..
Total expense	\$7,908.93	\$8,197.73	\$10,530.08	\$5,672.51	\$6,394.56	\$7,097.83
Total receipts	\$4,015.11	\$2,370.09	\$5,147.10	\$5,448.54	\$6,792.76	\$4,416.31

TABLE VI. — TRACK.

	1896-97	1897-98	1898-99	1899-1900	1900-01	1901-02
Doctors and rubbing	\$165.68	\$693.98	\$587.72	\$517.28	\$433.00	\$465.50
Expense of games	1,438.54	1,765.62	1,670.57	40.11	176.76	138.24
Travel and hotel expense	475.00	482.33	239.54	654.90	2,069.53	1,386.66
Labor and care of track	536.21	105.75	25.26	813.25	854.78	478.26
Miscellaneous expense	214.50	157.75	179.49	179.49	304.36	161.50
Printing	364.95	127.85	82.78	59.09	71.81	74.00
Outfits and supplies	..	610.00	233.50	280.84	572.65	422.65
Trainers and coaches	..	..	385.00	..	1,700.00	1,700.00
Training table	1,072.84	529.43	1,021.10	630.65	625.79	1,030.26
Total expense	\$4,264.72	\$4,472.71	\$4,245.47	\$2,675.61	\$6,328.68	\$5,657.07
Total receipts	\$1,721.86	\$2,174.63	\$923.43	\$1,865.74	\$3,440.49	\$4,910.28

It will be seen that the increase in receipts has more than kept pace with the growth of the University in Cambridge, while the expenditures have grown less in proportion. A fee or subscription from each student of \$16.72 a year would be sufficient to maintain the sports on their present scale without gate receipts, by means of which the larger part of the money is raised. Only a small part of the money that passes through the hands of the Graduate Treasurer is subscribed by graduates or students.

Four other tables are added, to indicate the separate items of expense for the most popular sports.

*Foot-ball.* — It will appear that the expenditures for foot-ball are steadily increasing. The outfit and supplies for candidates are expensive, as they require a variety of safeguards against injury while on the field. The number of candidates who try for the teams is much larger than it was when the sole idea was the production of one team. The foot-ball squad, after the weeding out of the unavailables, often numbers sixty men, as the possibility of injury renders it necessary to have several substitutes for each place. Public attention has so often been called to the dangerous side of the game, that the following list of injuries for the seasons of 1900 and 1901 is supplied from the records of the attending surgeons.

TABLE VII.

	1900	1901
Muscle and bone bruises . . . . .	6	14
Injuries about shoulder . . . . .	4	7
"    "    knee . . . . .	12	16
"    "    ankle . . . . .	4	10
Cuts . . . . .	4	4
Dislocations, — elbow . . . . .	1	1
clavicle . . . . .	1	1
shoulder . . . . .	2	1
finger . . . . .	..	1
Fractures, — nasal bones . . . . .	2	2
clavicle . . . . .	..	1
radius . . . . .	1	..
ulna . . . . .	..	1
metacarpal . . . . .	..	1
rib . . . . .	..	1
fibula . . . . .	1	..
	38	61

Mere bruises and contusions are not recorded where they did not take a player out of a subsequent game. The average period of disability was ten days, although this does not signify that the men were laid up for that period. In many cases they were simply

kept out of practice as a precautionary measure, and they were able to attend lectures. None of the injuries above recorded were followed with permanent disability, or with serious after-effects. There were 241 who played foot-ball more or less, but not all of them were strong enough to make even the class teams. The casualties were, therefore, about 25 per cent. of all who became candidates for the sport. This fact indicates not necessarily the impossibility of conducting the game without danger, but rather the desirability of changes in the rules, to make it less hazardous, and also more interesting.

At present a premium is put on weight and physical strength rather than on skill and activity, although the latter are undoubtedly useful to a player. So far as could be discovered by the doctors, no deaths have ever been traced directly to injuries received on a Harvard field. There is no permanent record covering a long period of years to show whether the game is now more or less dangerous than it was in former years. Some indication may be obtained from the average expenditure for medical attendance and massage. For the three years ending June, 1893, this was \$1,103.94; for the three years ending June, 1902, it was \$1,272.57. This comparison may not be wholly satisfactory, as the medical attendance has always been rendered by physicians interested enough in the students to give their services at merely nominal rates. The game is essentially a weeding process for the selection of the most powerful men, rather than a developer. At the same time it leads many young men to take an interest in outdoor life who would otherwise pay little attention to the care of the body.

*Base-ball.* — The number of candidates for base-ball has increased of recent years, and the interest in the game is fairly measured by the receipts. The same care and attention are given to the training of the men as in foot-ball. No injuries were reported during the last season.

*Rowing.* — The table of expenditures for rowing shows only part of the total expense, as the Newell and Weld clubs require almost as much money as the University crew. The total average per year for rowing during the past three years has been \$13,854.97, or about the same as is paid in foot-ball, and the number of men benefited has been twice as great. The growth of interest in rowing of recent years has been very marked, and presents some difficulties to the Committee in providing accommodations. The new boat house already needs a large addition to its locker space. Among the regulations established by the Committee is one requiring that no student shall

become a member of a crew who does not know how to swim. Up to this time the only practicable method of enforcing this rule has been to question the students who ask for boats at the boat houses, and this has proved sufficient during the past year. At the same time, students are occasionally tempted to go into a crew without clearly establishing their ability to swim.

*Track Athletics.*—The number of candidates for the track games has fallen off somewhat, although there is a continued interest in the events. There is not the element of team competition in these games which seems to be necessary to lead men to the field. They are contests in bodily activity rather than in skill. Another consideration is that the removal of the track to Soldier's Field has made it less convenient to individuals who are not drawn out of doors by their friends.

*Minor Sports.*—The interest in the minor sports has increased, and the number of students who take part in them is about equal to that in the larger sports. The Athletic Committee has encouraged them only in proportion to their value as developers.

*Grounds and Buildings.*—It will appear from Table II that a large amount of money has been used for permanent improvements. Unfortunately, part of this has gone into wooden seats which are destined to be short-lived. It is the present policy of the Committee to grade and drain the marsh outside of what was the old Soldier's Field. During the past year four acres of this was sown with grass seed and is now in good condition for use. There is a constant demand for additional opportunities for out-of-door sports. One improvement that must shortly be made is the replacement of the old wooden stands on each side of the foot-ball field. These demand a constantly increasing expenditure for repairs. Plans for new stands have been prepared by Professor L. J. Johnson, with the assistance of Mr. J. R. Worcester and the advice of Mr. McKim. Money has been reserved every year from the athletic income for the purpose of carrying out these plans, but the total amount necessary to put up a sightly structure has so far been prohibitive. It is hoped that the proposed stands may be in process of construction during the coming spring in order that a large expense for additions and repairs to the old stands may be saved.

*Eligibility Rules.*—The enforcement of eligibility rules has become almost a matter requiring special training for the purpose and special information about every athlete who contemplates taking part on one of the Harvard teams. The cases which have been ruled on during the year have been those of extremely technical violations of well-known

rules. That against professionalism, made at a time when abuses were glaring, has reached the point where a young man must be excluded from any important team if he has ever instructed a child in physical exercise of any kind for money; and some of the rulings seem absurd. At the same time, there is only one course open to an honorable body of men, and that is to enforce rules established in good faith until they can be modified by mutual agreement with other colleges. It seems impossible to avoid the numerous disputes in the present keen rivalry among the colleges for winning teams. Violations of rules can so easily be hidden that it is impossible to detect them; as, for instance, if a student is induced by a graduate or other students to go to a university to take part in athletic sports for a direct or indirect money inducement, the facts cannot be ascertained. This has led to a feeling among a number of those interested in athletic sports that the only measure of eligibility should be scholarship, leaving the individual sports to take care of themselves. This would mean that public opinion must be depended upon to maintain decency in the sports. Public opinion can act only through well-established rules and precedent, and these must be definitely formulated, if we are to have uniformity of practice, without which misunderstandings are common. There is only one basis upon which amateur sports can be conducted in colleges, and that is to assume that all the men going into the sports are gentlemen and that they will declare the facts in any case where their eligibility under established rules is questioned. A detective system for spying out the previous records of the young men is not only unacademic but it is also indecent. Unfortunately, the desire to play sometimes misleads students as to the real meaning of the rules. It is hoped that by conferences among the universities and colleges the spirit may be improved, and the proper interest in the games maintained, so that they may become builders of character as well as developers of the body. The next conference of the larger Eastern universities will be held in Cambridge.

*Coaches and Trainers.*—The payment of coaches has been a subject of anxious consideration by the Committee. After much discussion, a small salary, more or less as compensation for loss of time in an office, was voted to one of the graduates for foot-ball coaching. A larger sum, collected privately by graduates wholly outside of the Committee, and without the knowledge of the Committee, was added to this as a salary. While there seems to be no moral objection to a coach's receiving pay for his services, as the question is one mainly of policy in promoting amateur sports, there

is every reason why the facts should not be concealed from the members of the University. The Committee has a peculiar situation to face, as it is now the custom in many of the colleges and large schools to pay salaries to coaches and instructors in outdoor sports. Newly graduated students who have been members of teams easily obtain such positions in the secondary schools. It would, therefore, be decidedly exceptional for any large university to give up all payment for assistance on the athletic fields. The practice of paying coaches has a tendency to make the game a profession rather than a sport. Therefore, in the interests of genuine sport a useful reform could be effected by intercollegiate agreement to have no paid coaches or officers in any way responsible for the success of the teams. On the other hand, the guidance of the physician or trainer in diet and in the care of the body is needed by students. Otherwise, their inexperience is likely to lead them into excesses. The distinction between the two classes of men is simple in theory. The amateur coach shares with the captain the entire responsibility for the success of a group of youths acting as a team, and the trainer or instructor looks after the men individually, as a matter of health, skill, and diet. So long as this distinction is made, there is no temptation on the part of the trainer to assist in looking about the country for likely athletic material, and the colleges may be left to develop the young men who come to them naturally. Each sport has its own special requirements, however, which render a distinction between the two classes of men difficult to maintain in practice. For instance, in rowing there are three separate sides to the sport: one is the proper handling of the body by the individual, another is the proper rigging of the boat and seats, and the third is the coöperation of individuals to make a crew which acts as one man. These may well demand the services of two different classes of men, — the instructor, who is present at the boat house at all times to look after students who have had little experience in rowing; and the coach, to look after the men acting as a crew. It is doubtful if there are many men who know how to rig a boat, and this knowledge is as likely to be found among the amateur coaches as among professionals, inasmuch as it is purely a matter of mechanics and experience. An extension of the paid coach system would be unfortunate for Harvard sports, and ultimately would certainly detract much from the interest in them.

IRA N. HOLLIS.



## THE GRADUATE SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY: —

SIR, — As Dean of the Graduate School I have the honor to submit my report upon the School for the academic year 1901–02.

The members of the Administrative Board were Professors Toy, Jackson, Davis, M. Warren, Strobel, von Jagemann, Hart, Kittredge, Münsterberg, M. Bôcher, and the Dean of the School. The only member who had not been in service during the previous year was Professor Bôcher; he replaced Professor Byerly. The Board met seven times in the course of the year.

The subjects to be considered in this report are, first, the membership of the School; secondly, the degrees for which recommendations were made at the close of the year, and the holders of these degrees; thirdly, fellowships and scholarships; and, fourthly, miscellaneous topics, which include married men as fellows or scholars, the printing of the Doctors' dissertations, a proposed Graduate Hall, and other subjects. Much information about the School may be given in tabular form, and in tables which for the most part explain themselves.

- I. Number and classification of students (Resident and Non-Resident; students doing full or partial work; fields of study; length of connection with the School; holders of Bachelors' and of higher degrees): 1899–1900, 1900–01, 1901–02.
- II. Resident Students doing full work, and Non-Resident Students: 1886–1902.
- III. Percentage of students in their first and following years: 1896–1902.
- IV. Colleges and Universities represented, with degrees held: 1901–02.
- V. Percentage of students from other colleges: 1896–1902.
- VI. Percentage of Bachelors' degrees of different kinds: 1897–1902.
- VII. Colleges and Universities represented by four or more graduates in the School: 1897–98, 1898–99, 1899–1900, 1900–01, 1901–02.
- VIII. Birthplaces of Graduate Students: 1895–1902.
- IX. Residences of Graduate Students: 1899–1902.
- X. Recommendations for degrees in 1900, 1901, 1902.
- XI. Divisions and Departments in which recommendations for the higher degrees were made in 1902.
- XII. Age of Graduate Students recommended for the Masters' and Doctors' degrees: 1902.
- XIII. Age of Graduate Students recommended for the degree of Doctor of Philosophy: 1897–1902.
- XIV. Age of Graduate Fellows and Scholars in 1901–02.
- XV. Fellowships and Scholarships: numbers and classifications of applicants and appointees in 1900–01, 1901–02, 1902–03.

## STUDENTS.

The number of students registered in the School for 1901-02 was three hundred and fifteen, a smaller number than in the two previous years. This number does not include a few men who were in the School for a period of less than six weeks at the opening of the year. Besides these three hundred and fifteen persons, who were actually members of the School, might be reckoned twenty-eight members of the Class of 1902 in Harvard College who, in their Senior year, were pursuing studies that had been approved for the degree of Master of Arts.

The School lost one member by death after the close of the year. Wilfred Alexis Alward, of New Brunswick, a high minded and promising student of history, was drowned on July 17, at the Isles of Shoals. When he might have saved his own life he gave it up that others might be saved.

TABLE I. — NUMBER AND CLASSIFICATION OF STUDENTS.

	1899-1900.	1900-01.	1901-02.
I. Resident Students doing full work in the School for the whole academic year . . .	227	226	218
Resident Students not doing full work or not working for the whole year as resident students . . . . .	99	113	86
	— 326	— 339	— 304
Non-Resident Students holding fellowships .	13	14	11
Non-Resident Students not holding fellowships	2	0	0
	— 15	— 14	— 11
II. Students whose studies lay chiefly in *			
1. Semitic Languages and History . . . . .	0	1	1
2. Ancient Languages (Classics and Sanskrit)	55	47	41
3. Modern Languages (including Comparative Literature) . . . . .	83	75	70
4. History and Political Science . . . . .	54	53	52
5. Philosophy (including Education) . . . . .	48	65	41
6. Fine Arts (including Architecture) . . . . .	4	4	6
7. Music . . . . .	1	1	1
8. Mathematics . . . . .	12	20	17
9. Engineering . . . . .	4	6	6
10. Physics . . . . .	10	14	13
11. Chemistry . . . . .	17	19	21
12. Biology . . . . .	21	21	23
13. Geology . . . . .	10	14	13
14. American Archaeology and Ethnology . . .	3	3	2
Unclassed Students . . . . .	19	10	8
	— 341	— 353	— 315

\* For detailed statistics as to the number of Graduate Students enrolled in the various courses of instruction offered by the Faculty of Arts and Sciences, see the Report of the Dean, pp. 65-91.

III. First-year Students . . . . .	181	189	157
Second-year Students . . . . .	85	83	83
Third-year Students . . . . .	38	52	36
Fourth-year Students . . . . .	24	14	27
Students in a fifth or later year . . . . .	13	15	12
	— 341	— 353	— 315
IV. A.B.'s and S.B.'s of Harvard University and of no other institution . . . . .	101	101	94
A.B.'s and S.B.'s (and holders of similar degrees) of other institutions and also of Harvard University . . . . .	33	33	43
Students not holding the Harvard degree of A.B. or S.B. . . . .	207	219	178
	— 341	— 353	— 315
Students holding the Harvard degree of A.M., S.M., Ph.D., or S.D. . . . .	108	110	100
Students holding the Harvard degree of A.B. or S.B., but not of A.M., S.M., Ph.D., or S.D. . . . .	84	88	90
Students holding no Harvard degree in Arts, Philosophy, or Science . . . . .	149	155	125
	— 341	— 353	— 315

Admission to the Graduate School is ordinarily granted to holders of the Bachelor's degree of good colleges and to a few other persons of maturity. Though the degree of Bachelor of Arts is open to Students in the Graduate School, it is the policy of the Board to advise recent graduates of other colleges who seek this degree to secure admission to the Senior Class. The colleges and universities that were represented in the School in 1901-02 are named in Tables IV and VII.

The foregoing table (Table I) exhibits the usual classification of the students of the School and is given for convenience of comparison for the three successive academic years, 1899-1900, 1900-01, 1901-02. My comments upon this table will have reference, first, to the members of the School in general and to the amount of work done by them; secondly, to their fields of study; thirdly, to their period of residence, and, fourthly, to the extent to which the School draws its members from Harvard University as contrasted with other institutions.

Of the Resident Students two hundred and eighty were in attendance throughout the whole year. Of this number two hundred and eighteen, including all holders of fellowships and scholarships, were engaged in what is technically defined as a complete year of work (four courses of advanced grade or their equivalent) or were doing a larger amount of work. Sixty-two of the number in residence throughout the year were doing partial work, which ranged from a half-course (in six cases) to three courses. Of the remaining

TABLE II. — RESIDENT STUDENTS DOING FULL WORK, AND NON-RESIDENT STUDENTS: 1886-1902.

	1886-87	1887-88	1888-89	1889-90	1890-91	1891-92	1892-93	1893-94	1894-95	1895-96	1896-97	1897-98	1898-99	1899-1900	1900-01	1901-02
Resident Students doing full work in the School for the whole academic year . . . . .	88	48	50	62	62	108	127	162	161	175	194	171	218	227	226	218
Resident Students not doing full work or not working for the whole year as resident students . . . . .	26	36	39	84	55	79	73	86	94	105	96	107	103	99	113	86
Whole number of Resident Students . . . . .	64	84	89	96	117	187	200	248	255	280	290	278	321	326	339	304
Non-Resident Students holding fellowships . . . . .	10	10	9	11	11	9	9	10	12	13	14	15	13	13	14	11
Non-Resident Students not holding fellowships . . . . .	4	3	1	4	4	4	7	1	5	6	2	..	3	2	..	..
Whole number of Non-Resident Students . . . . .	14	13	10	15	15	13	16	11	17	19	16	15	15	15	14	11
Whole number of students . . . . .	78	97	99	111	132	200	216	259	272	299	306	293	336	341	353	315
Percentage of Resident Students doing full work for whole academic year . . . . .	59	57	56	65	53	53	64	65	63	63	67	62	68	70	67	72

twenty-four Resident Students, seven entered after November 1, 1901, and seventeen withdrew before the end of the year.

The foregoing table (II) gives the statistics, since 1886-87 when such statistics were first recorded, of Resident Students doing full or partial work, and of Non-Resident Students. The Graduate School contains two distinct classes of students: the first class is made up of the regular students, men who are devoting their entire time to their studies; the second class is composed of men to whom study in the School is a secondary matter, the larger part of their time and energies being given to the pursuit of a profession or to other similar occupations. Through the former class — which has been proportionately increasing from year to year — the School does its most effective work, but the latter class is extremely important. In the year 1901-02 about one-fifth of the Resident Students were registered for less than full work. Of the sixty-two men who in this year were doing partial work throughout the year, twenty-nine were teachers at this University either as assistants or as instructors; nineteen were teachers in actual service in neighboring colleges or schools; three were clergymen in charge of congregations; two were students in a neighboring theological institution, and the remaining nine consisted mainly of students who had nearly completed the requirements for the higher degree and found it necessary to register only for a small amount of instruction. Several of the teachers referred to above were enrolled in the courses on education and teaching. As I have remarked in previous reports, there is no good reason why a much larger number of teachers in the colleges and schools of eastern Massachusetts might not avail themselves of the opportunities for advanced work that are offered by the Faculty of Arts and Sciences.

The group of Non-Resident Students in 1901-02 included only holders of travelling fellowships.

The second division of Table I indicates in general the several fields of learning and science in which the work of the students chiefly lay. Classification here is difficult, since in the case of some students the work of each lies in more than one department, a fact that cannot be noted in this table. Detailed information about the choice of studies of Graduate Students in the several Departments may be obtained from the statistics which are given in the Report of the Dean of the Faculty of Arts and Sciences (see above, pages 65 to 91). The steady attraction, which varies but slightly from year to year, that several of the great Departments of learning exercise upon advanced students is apparent from the

table. In 1901-02 the subjects of study, arranged according to the number of students that pursued them, were : —

Modern Languages,	Geology,
History and Political Science,	Physics,
Ancient Languages,	Fine Arts,
Philosophy (including Education),	Engineering,
Biology,	American Archaeology,
Chemistry,	Semitic,
Mathematics,	Music.

It is noteworthy that there was an almost equal division of the students between the three great groups of the languages, ancient and modern (thirty-five per cent.), the historical and philosophical sciences (thirty-two per cent.), and the mathematical, physical and natural sciences (thirty-one per cent.). As compared with previous years there is a slight increase in the proportion of students of the last group, though it still remains true that more than two-thirds of the members of the Graduate School are devoted to the pursuit of language and literature, together with history and philosophy, as contrasted with the so-called sciences.

An inspection of the next division of the table (and of Table III below) shows that the proportion of students who were in the School for a second year and for a fourth year has slightly increased, whereas that for men in their first year, as also for those in their third year, has notably diminished. As in the past, about one-half of the members of the School have been in it but one year; somewhat less than half of these received the degree of Master of Arts (fifty-five) or Master of Science (seven) at the close of the year. About one-fourth have been in the School for two years only, while nearly the same number have been in it for three or more years. It must be borne in mind that for many of the First-Year Students — those of them who have pursued Graduate studies elsewhere — their first year at this University is really often a second or a third year of Graduate study. Table III shows that for the last six years the proportion of Second-Year, Third-Year, and Fourth-Year Students has been remarkably uniform, while that of First-Year Students has somewhat diminished since 1898-99. In spite of this diminution it is obvious that men who resort to the Graduate School for only one year of work are likely to continue to be the majority of its students, and it is highly desirable that steps should be taken to make as effective as possible this single year at the University.

The members of the Graduate School are for the most part a company of rather mature young men who have on the average

devoted a considerable time, since receiving their first degree, to intellectual work either as teachers or as Graduate Students here or elsewhere. In this respect the First-Year men of the Graduate School differ essentially from the First-Year men in professional schools. Of the First-Year Students in 1901-02 only twenty-six per cent. entered the School immediately on receiving their first degree (42); about twenty-one per cent. were one year out of college, *i. e.* had received their degree in 1900 (33); about seventeen per cent. had received their degree in 1899 (27); eight per cent. in 1898 (12); six per cent. in 1897 (10), while the remainder—about twenty-two per cent. (33)—had received the degree in 1896 or earlier, five or more years before they had entered the School. Without exception the seventy-four per cent. who had been one or more years out of college before coming to the School had been carrying on Graduate studies at other colleges or universities or had been engaged in teaching, or both. It is apparent from these statistics that the Graduate School as yet appears to make no strong appeal to very young men in the Senior classes either of Harvard College or of other colleges. The relatively advanced age, then, of Graduate Students has a distinct bearing upon the age limit that might fitly be established for recipients of such scholarships and fellowships as carry stipends.

TABLE III.—PERCENTAGE OF STUDENTS IN THEIR FIRST AND FOLLOWING YEARS: 1896-1902.

	1896-97.	1897-98.	1898-99.	1899-1900.	1900-01.	1901-02.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
First-year Students .	51	51	55	53	54	50
Second-year Students	28	25	21	25	23	26
Third-year Students .	16	15	13	11	15	12
Fourth-year Students and Students of longer residence .	10	9	11	11	8	12

The fourth division of Table I shows in general the extent to which the School draws its members from Harvard University as contrasted with other institutions (for specific information on this point Tables IV and VII may be consulted). About sixty per cent. of the members of the School held a degree from Harvard University, and the remaining forty per cent. of course held no Harvard degree; in 1900-01, however, these percentages were fifty-six and forty-four

TABLE IV. — COLLEGES AND UNIVERSITIES, WITH DEGREES HELD.

	A.B.	S.B.	Litt.B.	Ph.B.	A.M.	S.M.	Ph.D.	S.T.B.	LL.B.	M.D.	No. De- grees.	No. Per- sons.
Acadia University, N. S.	3				2						5	3
Albany Law School, N. Y.									1		1	1
Amherst College, Mass.	4	4			1						9	8
Antioch College, O.	1										1	1
Baker University, Kan.	1						1				1	1
Basel, University of, Switzerland											1	1
Bates College, Me.	3	1									3	3
Beloit College, Wis.	2	1									3	3
Berea College, Ky.	1										1	1
Boston University, Mass.	1				1						2	1
Bowdoin College, Me.	1				1						9	8
Brown University, R. I.	6	1		1	2						10	8
Bucknell University, Pa.	1										1	1
Butler University, Ind.	1										1	1
California, University of*	2		1	3	2						9	7
Cambridge, University of, England	1										1	1
Carleton College, Minn.	1										1	1
Chicago, University of, Ill.	1			1	1						3	3
Cincinnati, University of, O.		1		1							2	2
Colby College, Me.	3				1						4	3
Colorado, University of						1					1	1
Columbia University, N. Y.	2				1						2	2
Cornell University, N. Y.	1				2	1					1	1
Dalhousie University, N. S.	3	2									8	5
Dartmouth College, N. H.	4	1									5	5
Delaware College	1										1	1
Denison University, O.	1										1	1
De Pauw University, Ind.	1			1							2	2
Drake University, Ia.	1				1						2	1
Drew Theological Seminary, N. J.								1			1	1





TABLE IV. — CONTINUED.

	A.B.	S.B.	Litt.B.	Ph.B.	A.M.	S.M.	Ph.D.	S.T.B.	LL.B.	M.D.	No. De- grees.	No. Per- sons.
Northwestern University, Ill.	1										1	1
Oberlin College, O.	2	1		1							4	4
Ohio Wesleyan University	3	2			1						6	5
Oregon University of	1										1	1
Oxford University of England			1								1	1
Pennsylvania University of	1	2									3	3
Polytechnic Institute of Brooklyn, N.Y.	1	1									2	2
Princeton University, N.J.	3	1			1						5	4
Pritchett College, Mo.	1				1						2	1
Rutgers College, N.J.	1										1	1
St. Lawrence University, N.Y.	1				1						2	1
Southwestern Baptist University					1						1	1
Southwestern University					1						1	1
State of Missouri University of the	2	1	2		1						6	5
State University of Iowa		1				1					2	1
Strasbourg University of Germany							1				1	1
Syracuse University, N.Y.	1				1						2	1
Texas University of	3				2						5	3
Toronto University of Ont.	6				2						8	6
Trinity College, Conn.	4				1	1					6	5
Trinity College, N.C.					1						1	1
Tübingen University of Germany							1				1	1
Tufts College, Mass.	4										6	4
Union University, N.Y.	2										2	2
Ursinus College, Pa.	1										1	1
Utah University of		1									1	1
Vanderbilt University, Tenn.	2				2						4	3
Vermont University of				1	2						3	2
Victoria University, England	1										1	1
Virginia University of *	1				1						3	1
Wabash College, Ind.	2				1						3	3
Washington and Jefferson College, Va.	1										1	1

Washington University, Mo.	2																	3
Waynesburg College, Pa.	1						1											2
Wesleyan University, Conn.	3																	3
Western Reserve University, O.	2					1												3
West Virginia University	2						1									1		2
Williamette University, Ore.	1																	1
Williams College, Mass.	3																	3
Wisconsin, University of	1																	3
Wittenberg College, O.	1							2										5
Wofford College, S. C.	2								1									2
Worcester Polytechnic Institute, Mass.	1																	1
Yale University, Conn.	4															1		6
<b>Total</b>	<b>294</b>	<b>40</b>	<b>6</b>	<b>12</b>	<b>148</b>	<b>16</b>	<b>12</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>1</b>							<b>422</b>
<b>Non-Graduates and other Graduates (see note)</b>																		<b>428</b>
<b>Deduct for names counted twice or more than twice</b>																		<b>113</b>
																		<b>315</b>

\* Besides the degrees enumerated above, the following were held by one person each: Heb. B. and Rabbi, Hebrew Union College, O.; Ph.D., New York State Normal College; Litt.M., University of California; Mech. Eng., University of Virginia; B.A.S., Harvard University; S.D.B., Missouri State Normal School, Warrensburg. There were, further, in the School one Graduate each of Andover Theological Seminary, Mass., and Newton Theological Institution, Mass. There was one non-graduate of Harvard College who at Commencement received an A.B. as of the class of 1898.

respectively. This difference shows that the loss in numbers in 1901-02 as compared with the previous year was a loss in men from other colleges, an inference that is borne out by the fact that whereas in 1900-01 sixty-two per cent. of the members of the School held no Harvard first degree in Arts or Sciences, in 1901-02 this percentage had dropped to fifty-six. (See Table V, and p. 137.)

TABLE V. — PERCENTAGE OF STUDENTS FROM OTHER COLLEGES.

	1896-97.	1897-98.	1898-99.	1899-1900.	1900-01.	1901-02.
Percentage of Students holding no Harvard degree .	40	40	41	44	44	40
Percentage of Students holding no Harvard first degree in Arts or Sciences . . . .	52	55	55	61	62	56

Tables IV-VII supplement each other and show in detail the extent to which the different higher institutions in different parts of the country are represented in the Graduate School. In Table IV are given the various colleges and universities and the professional and technical schools whose graduates were members of the School in 1901-02, together with the degrees these men held and the number of different men from each institution.

These tables show that men continue to come to the Graduate School from colleges and universities from all parts of the country, and, to a slight extent, from those in Canada and foreign lands. The entire number of institutions represented thus is one hundred and eleven. Of the one hundred and fifty-seven First-Year men thirty-one per cent. came from Harvard, fourteen per cent. from other New England colleges, thirty-four per cent. from colleges in the central states, nine per cent. from colleges west of the Mississippi, only four per cent. from colleges in the southern states, while seven per cent. came from Canadian institutions. This comparatively small representation of the South among the First-Year men deserves to be noted. Perhaps this condition will be changed for the future by the Peabody Scholarship established within the current year for students from Georgia.

The most common degree held by members of the School was that of Bachelor of Arts; next, that of Master of Arts. A review

of the percentages of Bachelors' degrees for the past five years shows that the degree of Bachelor of Science is gaining slightly in popularity at the expense both of the Bachelor of Arts and of the other kinds of Bachelor's degrees.

TABLE VI. — PERCENTAGE OF BACHELORS' DEGREES OF DIFFERENT KINDS: 1897-1902.

	1897-98.	1898-99.	1899-1900.	1900-01.	1901-02.
A.B.'s . . . . .	84	86	84	80	84
S.B.'s . . . . .	9	8	10	11	11
Other Bachelor degrees . . .	7	6	6	9	5

There were one hundred and forty-eight Masters of Arts, sixteen Masters of Science, and twelve Doctors of Philosophy in the School in 1901-02, as against one hundred and seventy-seven Masters of Arts, fifteen Masters of Science, and twenty Doctors of Philosophy in the preceding year. The increasing popularity of the degree of Master of Science is of course the consequence of that of Bachelor of Science.

There is but a slight change in the lists of colleges which have for several years each sent four or more representatives to the Graduate School (Table VII). Leaving Harvard graduates out of consideration, there were in 1896-97 fourteen colleges represented by four or more men; 1897-98, eighteen; 1898-99, fifteen; 1899-1900, twenty-four; 1900-01, twenty-three; 1901-02, seventeen.

The colleges and universities that have been steadiest in the supply of Graduate Students for the past five years, each sending four or more each year, are Amherst, Brown, California, Toronto, and Yale. Other colleges that within this period have sent four or more students, for four years, are Bowdoin, Haverford, Kansas, Northwestern, Oberlin, Tufts; for three years, Dalhousie, Dartmouth, Indiana, Leland Stanford, Michigan, Nebraska, Wesleyan (Conn.), Western Reserve.

In my last report I gave at length statistics with reference to the extent to which members of the School have pursued Graduate studies before they came to Harvard University, and the general subject of the migration of Graduate Students has been exhaustively considered in a paper presented by Dean Birge, of the University of Wisconsin, at the meeting of the Association of American Universi-

TABLE VII. — COLLEGES AND UNIVERSITIES REPRESENTED BY FOUR OR MORE GRADUATES IN THE SCHOOL:  
1897-98, 1898-99, 1899-1900, 1900-01, 1901-02.

1897-98.	1898-99.	1899-1900.	1900-01.	1901-02.
Harvard, 178	Harvard, 198	Harvard, 191	Harvard, 197	Harvard, 189
Kansas, 7	Yale, 10	California, 8	Brown, 11	Amherst, 8
Brown, 7	Brown, 8	Amherst, 7	Amherst, 7	Bowdoin, 8
California, 6	California, 8	Michigan, 7	Bowdoin, 10	Brown, 8
Dartmouth, 6	Leland Stanford Jr., 7	Oberlin, 6	Oberlin, 9	California, 7
Vermont, 6	Toronto, 6	Leland Stanford Jr., 6	California, 7	Toronto, 6
Amherst, 5	Bowdoin, 6	Northwestern, 6	Illinois, 7	Dalhousie, 5
Northwestern, 5	Northwestern, 6	Brown, 5	Dalhousie, 7	Dartmouth, 5
Oberlin, 5	Tufts, 6	Haverford, 5	Michigan, 7	Ohio Wesleyan, 5
Princeton, 5	Amherst, 5	Pennsylvania, 5	Yale, 5	Trinity (Conn.), 5
Toronto, 5	Haverford, 5	Toronto, 5	Dartmouth, 6	New Brunswick, 5
Wesleyan (Conn.), 5	Indiana, 5	Tufts, 5	Toronto, 6	Missouri, 5
Western Reserve, 5	Iowa, 5	Wesleyan (Conn.), 5	Wesleyan (Conn.), 6	New Brunswick, 5
Acadia, 4	Kansas, 5	Beloit, 4	Williams, 6	Haverford, 4
Indiana, 4	Michigan, 4	Boston Univ., 4	Boston Univ., 5	Oberlin, 4
Leland Stanford Jr., 4	Western Reserve, 4	Boston Univ., 4	Kansas, 5	Princeton, 4
Mass. Inst. Tech., 4		Bowdoin, 4	Northwestern, 5	Tufts, 4
Ohio Wesleyan, 4		Colby, 4	Pennsylvania, 5	Yale, 4
Yale, 4		Dalhousie, 4	Tufts, 5	
		Indiana, 4	Beloit, 4	
		Kansas, 4	Dalhousie, 4	
		Nebraska, 4	Haverford, 4	
		Rochester, 4	Nebraska, 4	
		Western Reserve, 4	New Brunswick, 4	
		Williams, 4		
		Yale, 4		
Total Membership, 293	386	841	858	815

ties held in February, 1902. With respect to members of the School in 1901-02 I will only add that ninety, a little more than one-quarter of the whole number, had carried on Graduate studies elsewhere; in 1900-01 the proportion was two-fifths; in 1899-1900 it was about one-third. This would seem to mean that the tide of migration hither has been temporarily checked.

With the migrants might well be grouped teachers who are in the School on formal leave of absence and expect to return to the positions they have left. Ten colleges were thus represented in the School in 1901-02, and five preparatory schools or institutions of the same grade were similarly represented. This enumeration does not include the large number of men who were actively engaged in teaching in or near Cambridge and Boston, either in the University or independently, and were registered for partial work. There were, as has already been remarked, twenty-nine such in the service of this University, and nineteen other teachers registered in the School.

TABLE VIII. — BIRTHPLACES OF GRADUATE STUDENTS: 1895-1902.

	1898-99.	1899-01.	1901-02.	1902-03.	1903-04.	1904-05.	1905-06.
Students born in the New England States . . . . .	181	141	121	143	122	127	107
Students born in other Northern States east of the Mississippi River . . . . .	85	86	89	106	119	136	109
Students born in Southern States east of the Mississippi River . . . . .	19	13	19	15	17	16	11
Students born in States west of the Mississippi River . . . . .	25	25	26	30	34	30	39
Students born in the Dominion of Canada . . . . .	16	17	18	25	23	21	23
Students born in other foreign countries . . . . .	23	24	20	17	26	23	27
Total number of students . . . . .	299	306	293	336	341	353	315
Percentage of students born in New England . . . . .	44	46	41	43	36	36	34
Percentage of students born elsewhere . . . . .	56	54	59	57	64	64	66

TABLE IX. — RESIDENCES OF GRADUATE STUDENTS: 1899–1902.

	1899-1900.	1900-01.	1901-02.
New England States . . . . .	154	167	146
Northern States east of the Mississippi River . .	94	99	88
Southern States east of the Mississippi River . .	22	16	11
States west of the Mississippi River . . . . .	45	46	45
Canada . . . . .	19	18	19
Foreign countries . . . . .	7	7	6
	<u>341</u>	<u>353</u>	<u>315</u>

These tables (VIII, IX) show that two-thirds of the students in 1901–02 were born out of New England, and that, on the whole, this proportion has been slowly increasing since 1895–96. On the other hand, almost exactly one-half claim residence in New England. A comparison of these two tables proves that a considerable number of persons not born in New England have taken up their permanent residence in it. While the percentage of students from different parts of the country in general shows no very marked variation within three years, it should be noted that the representation of the Southern States in 1901–02 is one-half what it was three years ago. Assuming that the same number of advanced students from the South enter northern universities from year to year, it is clear that other northern institutions are gaining in such students at the expense of Harvard University.

#### DEGREES.

One hundred and sixty-three men were recommended\* for the higher degrees at Commencement, 1902, one more than in the previous year, though the membership of the School in that year was about twelve per cent. larger than in 1901–02.

The details are found in the following table (X), which gives in the first and second parts the number of students in the Graduate School recommended by the Faculty of Arts and Sciences for any degree, and the number of other students recommended for the degree of Master of Arts, Master of Science, Doctor of Philosophy, and Doctor of Science in the three years, 1900, 1901, 1902. In the third part of the table all persons recommended for the higher degrees are classified with reference to their previous graduation as Bachelors of Arts or of Science.

\* The number of persons recommended each year, and that of the men who actually receive the degree, as published in the Annual Catalogue, do not always agree. Usually a few of the candidates recommended do not receive the degree at once. The degree is in these cases ordinarily conferred in a later year, "as of" the year in which the recommendation was made.



TABLE X.—RECOMMENDATIONS FOR DEGREES IN 1900-02.

	1900.	1901.	1902.
I. Graduate students recommended for A.B. . . . .	10	13	11
Graduate students recommended for A.M. . . . .	106	92	94
Graduate students recommended for S.M. . . . .	1	9	8
Graduate students recommended for Ph.D. . . . .	35	29	28
Graduate students recommended for S.D. . . . .	1 158	0 148	8 144
II. College Seniors recommended for A.M. . . . .	0	1	1
College Seniors of a preceding year, recom- mended for A.M. on work done in Senior year	19	23	19
College Seniors of a preceding year, recom- mended for S.M. on work done in Senior year	1	0	0
Professional students recommended for A.M. on special courses of study . . . . .	7	8	10
Professional students recommended for Ph.D. on special courses of study . . . . .	0 27	0 32	0 30
Total of the above list . . . . .	180	175	174
Deduct Graduate students recommended for A.B. . . . .	10	18	11
Total number recommended for A.M., S.M., Ph.D., and S.D. . . . .	170	162	163
III. Harvard Bachelors of Arts or Science, not previously graduated elsewhere . . . . .	62	59	58
Harvard Bachelors of Arts or Science, pre- viously graduated elsewhere . . . . .	22	20	31
Students not Harvard Bachelors of Arts or Science . . . . .	86 170	83 162	74 163

Two or three remarks suggest themselves on this table. Nearly twelve per cent. of the recommendations for the higher degrees were made of candidates for the degree of Master of Arts who had never been registered in the Graduate School, though the Administrative Board had passed upon their programmes of study. In this category belong nineteen members of the Senior Class of 1901 who had completed in their Senior year four approved courses for the degree ("postponed A. M.'s").

The gradual increase in the proportion of non-Harvard men who are coming up for the higher degrees, to which I called attention in my last report, was checked in 1902. In this year about forty-five per cent. of the men recommended for the higher degrees held no first degree from Harvard; in 1901, however, over fifty-one per cent.; in 1900, about fifty per cent.; in 1899, about forty-four per cent.

The largest number of Masters of Arts recommended in course at this University was that of 1900, when there were one hundred

and thirty-two; in 1901 and in 1902 the number was one hundred and twenty-four; in 1899, one hundred and twenty-three; in 1898, one hundred and seven, a number that had not been exceeded in previous years, except in 1897, when one hundred and thirteen recommendations were made.

The number of members of the Graduate School who are recommended for the degree of Bachelor of Arts is happily diminishing. The time must be ripe when the anomalous custom of conferring the Bachelor's degree on Graduate Students might be abolished.

In the next table (XI) the Departments or fields of study are indicated in which lay the chief work of the candidates for the

TABLE XI.—DIVISIONS AND DEPARTMENTS IN WHICH RECOMMENDATIONS FOR THE HIGHER DEGREES WERE MADE IN 1902.

DIVISION.	DEPARTMENT.	DEGREES.			
		A.M.	S.M.	PH.D.	S.D.
I. Semitic Languages and History . . . . .		1	..	..	..
II. Ancient Languages :					
Indic Philology . . . . .		1	..	1	..
The Classics (Greek, Latin) . . . . .		16	..	6	..
Total in Ancient Languages . . . . .		— 17	— ..	— 7	— ..
III. Modern Languages :					
English . . . . .		15	..	3	..
Germanic Languages and Literatures . . . . .		3	..	..	..
French, and other Romance Languages and Literatures . . . . .		8	..	4	..
In more than one Department . . . . .		1	..	..	..
Total in Modern Languages . . . . .		— 27	— ..	— 7	— ..
IV. History and Political Science :					
History and Government . . . . .		10	..	3	..
Political Economy . . . . .		15	..	1	..
Total in Hist. and Political Sci. . . . .		— 25	— ..	— 4	— ..
V. Philosophy . . . . .		15	..	2	..
[Education . . . . .	2]				
VI. The Fine Arts :					
History and Principles of the Fine Arts . . . . .			..	..	..
Architecture . . . . .		1	..	..	..
Total in the Fine Arts . . . . .		— 1	— ..	— ..	— ..
VII. Music . . . . .		1	..	..	..
VIII. Mathematics . . . . .		6	..	1	..
IX. Engineering . . . . .		..	1	..	..
X. Physics . . . . .		1	..	..	..
XI. Chemistry . . . . .		2	3	2	1

DIVISION.	DEPARTMENT.	DEGREES.			
		A.M.	S.M.	PH.D.	S.D.
<b>XII. Biology :</b>					
	Botany . . . . .	3	1	3	1
	Zoology . . . . .	2	..	2	..
	Total in Biology . . . . .	— 5	— 1	— 5	— 1
<b>XIII. Geology :</b>					
	Geology and Geography . . . . .	3	2	..	1
	Mineralogy and Petrography . . . . .	..	..	..	..
	Mining and Metallurgy . . . . .	4	1	..	..
	Total in Geology . . . . .	— 7	— 3	— ..	— 1
<b>XIV. American Archaeology and Ethnology . . . . .</b>					
	In more than one Division . . . . .	5	..	..	..
<b>Professional Students :</b>					
	Divinity School . . . . .	5	..	..	..
	Law School . . . . .	3	..	..	..
	Medical School . . . . .	2	..	..	..
	Total . . . . .	124	8	28	3

**Masters' and Doctors' degrees.** The Divisions which were represented by ten or more candidates were History and Political Science, thirty-nine (including four Doctors); Modern Languages, thirty-four (including seven Doctors); Ancient Languages, twenty-four (including seven Doctors); Philosophy, seventeen (including two Doctors); Biology, twelve (including six Doctors); Geology, eleven (including one Doctor).

The degree of Doctor was conferred on the thirty-one men named below: that of Doctor of Philosophy on twenty-eight of them, and that of Doctor of Science on three. With each name is indicated the special field in which the degree was taken, the candidate's academic history, the subject of his thesis, and his present occupation.

The Doctors of Philosophy were:—

#### Philology.

##### DONALD CAMERON.

Classical Philology.—A.B. (*Univ. of Texas*) 1895, A.M. (*ibid.*) 1898, A.M. (*Harvard Univ.*) 1900.—Res. Gr. Stud., 1899-1902.  
Thesis: "Quæ in Festi Sententiis et. Oratio a Paulo mutata sint quaeritur."  
Now studying Classical Philology at Berlin, as Parker Fellow.

##### FRANK LOWRY CLARK.

Classical Philology.—A.B. (*Amherst Coll.*) 1894, A.M. (*Harvard Univ.*) 1899.—Res. Gr. Stud., 1898-99 and 1900-01.  
Thesis: "Quæ Ratione Platonis laudandi usus sit Clemens Alexandrinus quaeritur."  
Professor of Greek in Washburn College, Kansas.

##### THATCHER CLARK.

Romance Philology.—A.B. (*Columbian Univ., D.C.*) 1898, A.M. (*Harvard Univ.*) 1899.—Res. Gr. Stud., 1898-1902.  
Thesis: "Long unaccented final e, in Latin, does not phonetically become i in Italian."  
Teacher of Modern Languages in the University School, Baltimore.

##### WILLIAM WISTAR COMFORT.

Romance Philology.—A.B. (*Haverford Coll., Pa.*) 1894, A.B. (*Harvard Univ.*) 1895, A.M. (*ibid.*) 1898.—Res. Gr. Stud., 1895-97.  
Thesis: "The Development of the Character Types in the French *Chansons de geste.*"  
Instructor in Romance Languages in Haverford College.

##### HAROLD DE WOLF FULLER.

English Philology.—A.B. (*Adelbert Coll. of Western Reserve Univ., O.*) 1897, A.B. (*Harvard Univ.*) 1898, A.M. (*ibid.*) 1900.—Res. Gr. Stud., 1897-Feb. 1899, and Feb. 1900-02.

Thesis: "The Sources and Authorship of Titus Andronicus."

Student of English Philology and Comparative Literature at Leyden, as Rogers Fellow.

##### JOSEPH WILLIAM HEWITT.

Classical Philology.—A.B. (*Bowdoin Coll., Me.*) 1897, A.M. (*ibid.*) 1899, A.M. (*Harvard Univ.*) 1900.—Res. Gr. Stud., 1899-1902.  
Thesis: "De Rationibus Jovis Græcorum placandi Capitula."  
Instructor in Classics at the Worcester Academy.

**WALTER DAVID HOPKINS.**

Indic Philology.—A.B. (*Cornell Univ., N.Y.*) 1898, A.M. (*Harvard Univ.*) 1900.—Res. Gr. Stud., 1899-1901 and first half of 1901-02.

Thesis: "Hindu Family Life as set forth in the *Jātakas*."

Now teaching Latin in the Boys' High School, Brooklyn, N.Y.

**PRENTISS CHENEY HOYT.**

English Philology.—A.B. (*Middlebury Coll., Vt.*) 1890, A.M. (*ibid.*) 1892, A.M. (*Harvard Univ.*) 1899.—Res. Gr. Stud., 1898-1902.

Thesis: "The Anture of Arthur at the Tarne Wathelan."

Now Instructor in English at this University.

**SYLVANUS GRISWOLD MORLEY.**

Romance Philology.—A.B. (*Tufts Coll.*) 1896, A.M. (*Harvard Univ.*) 1899.—Res. Gr. Stud., 1898-1902.

Thesis: "Spanish Influence on Molière."

Instructor in Romance Languages and Literatures at this University.

**LEWIS REICHLÉ.**

Classical Philology.—A.B. (*Univ. of Michigan*) 1898, A.M. (*ibid.*) 1894, A.M. (*Harvard Univ.*) 1899.—Res. Gr. Stud., 1898-1901.

Thesis: *De ab de ez Præpositionum in Inscriptionibus Usu*."

Now continuing his studies at Cambridge.

**CARL COSMO RICE.**

Romance Philology.—A.B. (*Univ. of Texas*) 1897, A.M. (*ibid.*) 1899, A.M. (*Harvard Univ.*) 1900.—Res. Gr. Stud., 1899-1902.

Thesis: "The Phonology of Gallic Clerical Latin after the Sixth Century."

Assistant Professor of Modern Languages and Latin, in the University of Oregon.

**JOHN CALVIN WATSON.**

Classical Philology.—A.B. (*Eureka Coll., Ill.*) 1892, A.B. *cum laude* (*Harvard Univ.*) 1894, A.M. (*ibid.*) 1900.—Res. Gr. Stud., 1899-1902.

Thesis: "De Scænarum Titulis Imaginibusque Personarum Terentianis in Codicibus Pictis."

Instructor in Latin at Cornell University.

**KENNETH GRANT TREMAYNE WEBSTER.**

English Philology.—A.B. (*Dalhousie Univ., N.S.*) 1892, A.B. (*Harvard Univ.*) 1893, A.M. (*ibid.*) 1894.—Res. Gr. Stud., 1893-94, 1898-99, and 1900-02.

Thesis: "Lancelot and Guinevere: A Study in the Origins of Arthurian Romance."

Teacher of English, Milton Academy, Mass.

**WILLIS PATTEN WOODMAN.**

Classical Philology.—A.B. *magna cum laude* 1896, A.M. 1896.—Res. Gr. Stud., 1896-98, 1898-99, 1900-02.

Thesis: "De Arte Piscandi apud Antiquos Græcos."

Instructor in Latin at Princeton University.

**Philosophy.****FREDERICK MEAKIN.**

Psychology.—A.B. (*Antioch Coll., O.*) 1875, S.B. (*Harvard Univ.*) 1878, A.M. (*ibid.*) 1901.—Res. Gr. Stud., 1900-02.

Thesis: "Inhibition of Ideas."  
Present residence and occupation unknown.

**ROBERT MEARNS YERKES.**

Psychology.—A.B. (*Urbiana Coll., Pa.*) 1897, A.B. (*Harvard Univ.*) 1898, A.M. (*ibid.*) 1899.—Res. Gr. Stud., 1898-1902.

Thesis: "The Psychic Processes of the Frog."

Instructor in Psychology at this University.

**History.****ROGER BIGELOW MERRIMAN.**

English History.—A.B. 1898, A.M. 1897, LITT.B. (*Univ. of Oxford, England*) 1898.—Res. Gr. Stud., 1898-97 and 1899-1900; Non-Res. Stud., 1900-02.

Thesis: "The Life and Letters of Thomas Cromwell."

Instructor in History at this University.

**FRANCIS SAMUEL PHILBRICK.**

American History.—A.B. (*Univ. of Nebraska*) 1897, A.M. (*ibid.*) 1899.—Res. Gr. Stud., 1899-1902.

Thesis: "The Relations of the United States and Cuba to 1890."

Now studying History in Europe, as John Harvard Fellow.

**JOSEPH PARKER WARREN.**

Government.—A.B. *summa cum laude* 1898, A.M. 1897.—Res. Gr. Stud., 1898-97, 1898-Jan. 1901, and 1901-02.

Thesis: "The Shays Rebellion."

Instructor in History, University of Chicago.

**Political Science.****FREDERICK ALEXANDER BUSHÉE.**

Sociology.—LITT.B. (*Dartmouth Coll., N.H.*) 1894, A.M. (*Harvard Univ.*) 1898.—Res. Gr. Stud., 1897-1900; Non-Res. Stud., 1900-01.

Thesis: "Ethnic Factors in the Population of Boston."

Instructor in History and Economics in the Collegiate Department of Clark University.

**Mathematics.****OTTO DUNKEL.**

Analysis.—Mech. Eng. (*Univ. of Virginia*) 1898, A.B. (*ibid.*) 1898, A.M. (*ibid.*) 1898, A.M. (*Harvard Univ.*) 1899.—Res. Gr. Stud., 1898-1902.

Thesis: "Regular Singular Points of a System of Homogeneous Linear Differential Equations of the First Order."

Instructor in Mathematics, Wesleyan University, Middletown, Conn.

**Chemistry.****EBENEZER HENRY ARCHIBALD.**

Inorganic Chemistry.—S.B. (*Dalhousie Univ., N.S.*) 1897, S.M. (*ibid.*) 1898, A.M. (*Harvard Univ.*) 1900.—Res. Gr. Stud., 1898-1902.

Thesis: "The Atomic Weight of Caesium."  
Demonstrator of Inorganic Chemistry, McGill University, Montreal, Que.

**WILLIAM JAY HALE.**

Organic Chemistry.—A.B. (*Miami Univ., O.*) 1897, A.M. (*ibid.*) 1897, A.B. (*Harvard Univ.*) 1898, A.M. (*ibid.*) 1899.—Res. Gr. Stud., 1898-1902.

Thesis: I. "On the Oximes of Nitromalonic Aldehyde." II. "On the Condensation of Nitromalonic Aldehyde with Benzylmethyl Ketone."

Now studying Chemistry at Berlin, as Harris Fellow.

## Biology.

## ROBERT STANLEY BREED.

Zoölogy.—S.B. (*Amherst Coll.*) 1898, S.M. (*Univ. of Colorado*) 1899.—Res. Gr. Stud., 1899-1902.

Thesis: "The Metamorphosis of the Muscles of a Beetle (*Thymalus marginicollis*, Chev.)."

Professor of Biology and Geology, Allegheny College, Meadville, Pa.

## CYRUS AMBROSE KING.

Botany.—A.B. (*Indiana Univ.*) 1898, A.B. (*Harvard Univ.*) 1897, A.M. (*Ibid.*) 1898.—Res. Gr. Stud., 1896-1900.

Thesis: "Observations on the Cytology of Arachnids, *Pulchra*, Thaxter." Teacher of Biology, De Witt Clinton High School, New York City.

## EDGAR WILLIAM OLIVE.

Botany.—S.B. (*Wabash Coll., Ind.*) 1898, S.M. (*Ibid.*) 1896, A.M. (*Harvard Univ.*) 1897.—Res. Gr. Stud., 1896-98.

Thesis: "A Monograph of the Acrostaceae." Instructor in Botany at this University.

## CARLETON ESTEY PRESTON.

Botany.—A.B. *cum laude* 1899, A.M. 1900.—Res. Gr. Stud., 1899-1900; Non-Res. Stud., 1900-01.

Thesis: "Structural and Ecological Studies on Desert Vegetation." Assistant in Botany, Yale Forest School.

## WILLIAM MARTIN SMALLWOOD.

Zoölogy.—A.B. (*Syracuse Univ., N.Y.*) 1896, A.M. (*Ibid.*) 1897.—Res. Gr. Stud., 1901-02.

Thesis: "The Maturation, Fertilization, and Early Cleavage of *Bulla solitaria*." Associate Professor of Zoölogy, Syracuse University.

The Doctors of Science were:—

## Chemistry.

## RICHARD BLAIR EARLE.

Organic Chemistry and Inorganic Chemistry.—S.B. (*Worcester Polytechnic Inst.*) 1897, S.M. (*Harvard Univ.*) 1899.—Res. Gr. Stud., 1898-1902.

Thesis: I. "On the Constitution of the Colored Compounds obtained from Sodid Alcoholates and certain Aromatic Compounds." II. "On the Action of Sodid Sulphite in Alcoholic Solution on Tribromodinitrobenzol and Tribromotrinitrobenzol." Research Assistant of Professor Stieglitz, University of Chicago.

## Biology.

## GEORGE PERKINS CLINTON.

Botany and Zoölogy.—S.B. (*Univ. of Illinois*) 1890, S.M. (*Ibid.*) 1894, S.M. (*Harvard Univ.*) 1901.—Res. Gr. Stud., 1900-02.

Thesis: "North American Ustilagineae." Botanist, Connecticut Agricultural Experiment Station, New Haven, Conn.

## Geology.

## JOSEPH EDMUND WOODMAN.

General Geology and Glacial Geology.—S.B. 1898, A.M. 1900.—Res. Gr. Stud., Apr. 1899-1900.

Thesis: "Geology of the Moose River Gold District, Halifax County, Nova Scotia; together with the Pre-Carboniferous History of the Meguma Series."

Assistant Professor of Geology and Mineralogy, Dalhousie University, Halifax, N.S.

Of these thirty-one Doctors, twenty-five—or more than four-fifths of the entire number—are known to be now engaged each in the actual pursuit of his profession. Except one, who is a scientific assistant at an agricultural experiment station, all of the twenty-five are teachers either in colleges or universities (five being professors, and fourteen instructors), or in secondary institutions (five). Of the teachers five are in the service of this University as instructors. Five of the remaining Doctors are continuing their studies, one in Cambridge, and the others in Europe as holders of fellowships. Nothing is known, at this writing, of the occupation of the remaining Doctor.

As the degree of Doctor of Philosophy at this University is based on the Harvard degree of Bachelor of Arts, or its equivalent, all the Doctors of Philosophy held either a first or second degree in Arts, except one: he, though a Bachelor and Master of Science, had also fulfilled the requirements for the first degree in Arts. Twenty-five of

the twenty-eight held Harvard degrees: eleven Harvard A.B. and A.M., and fourteen A.M. only. All were Bachelors of Arts except five; of these two were respectively Bachelor of Science and Master of Arts, and Bachelor of Science and Master of Science; three were Harvard Masters of Arts, of whom two were also Bachelors of Science, and one a Bachelor of Letters.

In the case of twelve candidates, six or more years had elapsed since the candidate had received a Harvard A.B. or had been accepted as of equivalent standing. Of the remaining sixteen, two were Bachelors of Arts of five years' standing, seven of four years' standing, six of three years' standing, and one of two years' standing.

The period of resident study at this University varied between one year (two candidates) and four years (twelve candidates). Six candidates had spent two years, and eight three years in residence. But it must be remembered that nearly all these candidates had spent besides one or more years in Graduate study at other universities, American or foreign. The Division in which the degree was conferred after but one year of resident study was Biology (two candidates). The Divisions or Departments in which the degree was conferred after two years of resident study were—each with one candidate—Indic Philology, Classics, Romance Philology, Philosophy, History, and Biology. The Departments where three years were found necessary by some candidates were Classics (four) and Romance Philology, History, Political Science, and Biology, each with one candidate. The twelve remaining candidates, who had each devoted four years to resident study in preparation for the degree, were students of English (three candidates); Romance Philology and Chemistry (each with two candidates), and Classics, Philosophy, History, Mathematics, and Biology (one each).

The average period of resident study for these candidates is a little above three years. The large number of four-year men in 1902 (twelve) as compared with the smaller number in 1901 (four) is formidable. The tendency to the reduction of the period of study which was noted in my last report has ceased, probably because some of the four-year candidates gave much of their time to teaching.

Statistics of several years show that the period of professional study for the degree of Doctor of Philosophy is fixing itself at three years—the normal period for graduates in Law and Divinity, and shorter than the normal period for graduates in Medicine.

TABLE XII. — AGE OF GRADUATE STUDENTS RECOMMENDED FOR THE DEGREES OF MASTER OF ARTS, MASTER OF SCIENCE, DOCTOR OF PHILOSOPHY, AND DOCTOR OF SCIENCE: 1902.\*

	20	21	22	23	24	25	26	27	28-34	35-39	40 or over	Total.
A.M.'s . . .	1	3	13	11	11	9	6	3	26	3	2	88
S.M.'s . . .	..	2	2	..	1	..	..	3	..	..	..	8
Ph.D.'s . . .	..	..	..	1	2	3	4	2	14	1	1	28
S.D.'s . . .	..	..	..	..	..	..	1	..	1	1	..	3

Table XII gives the age of Graduate Students recommended for the higher degrees at Commencement, 1902, and Table XIII that of Doctors of Philosophy for the six years since 1897. What I have said on the subject of the age of candidates for the higher degrees in former reports remains true. The average age of the normal Master of Arts—that is, a student who has continued his studies immediately on receiving his Bachelor's degree or after an interval of not more than one year—is a little under twenty-four. The large group of older men is made up of men who have been obliged to interrupt or intermit their studies by two or more years of active service, mainly professional, in which they have secured the means to continue their studies.

The normal Doctors are of course older, but not much older, as a glance at the statement of the average age of the Doctors from 1897 to 1902, given in Table XIII, will show. This is a little above

TABLE XIII. — AGE OF GRADUATE STUDENTS RECOMMENDED FOR THE DEGREE OF DOCTOR OF PHILOSOPHY: 1897-1902.

	22	23	24	25	26	27	28 or over	Average age of men 27 or under.
1897 . . . . .	..	..	3	1	4	2	15	25.5
1898 . . . . .	1	..	1	4	2	2	15	25.2
1899 . . . . .	1	4	2	3	2	1	8	24.3
1900 . . . . .	..	2	3	4	2	6	18	25.4
1901 . . . . .	..	..	1	3	5	3	17	25.8
1902 . . . . .	..	1	2	3	4	2	16	25.3

twenty-five years. So long, however, as candidates in considerable numbers yield to the temptation of the opportunities of making

\* Men recommended for "as of" degrees are not included.

money at the University as teachers, teaching fellows, or assistants, the age at which such men can come up for the degree will be inevitably increased. It is a question whether in the long run it would not be wiser for the University—both in the interests of these men and of the efficiency of university instruction—to enable promising candidates by an ampler provision of scholarship aid promptly to conclude their studies for the Doctorate, and then, and not till then, secure their services at a time and under circumstances when they can give their undivided energies to their task of teaching.

#### FELLOWSHIPS AND SCHOLARSHIPS.

The appointments to fellowships and scholarships for 1901–02 were made toward the close of the preceding academic year, chiefly in June, 1901; similarly the appointments for the coming year, 1902–03, were for the most part made within the academic year covered by the present report. The recommendations to fellowships and scholarships are made by the Faculty of Arts and Sciences on the nomination of its Committee on Fellowships and other Aids for Graduate Students, and thus are a part of the business of that Faculty; but as the students appointed are members of the Graduate School, information on this subject is always given in the reports of the Dean of this School.

Twenty-four\* fellowships and forty-seven scholarships were held by students in the Graduate School in 1901–02. With these fellowships are included the John Harvard Fellowships, without stipend,—two in 1901–02. Eleven of the fellowships, including the two John Harvard Fellowships, were held by Non-Resident Students who pursued their studies abroad,—in England (two), France (one), Germany (five), Italy (two), and Greece (one). Fourteen of the fellowships and all the scholarships were held by Resident Students.

For 1902–03 appointments have been made to twenty-nine fellowships and to fifty-three scholarships.

The names of the holders of fellowships for the two academic years 1901–02 and 1902–03, with statements as to the present occupation of each, follow. The fellowships are arranged in the order of their foundation.

\* In these lists and enumerations the Austin Teaching Fellowships are not included; they are of the nature of instructorships or assistantships and are therefore noted in another place. In 1901–02 they were fifteen in number.



1901-02.

1902-03.

## Harris Fellowship.

## CHARLES NELSON HASKINS.

S.B. (*Mass. Inst. of Technology*) 1897, S.M. (*Harvard Univ.*) 1899, A.M. (*ibid.*) 1900, Ph.D. (Mathematics) 1901. — Res. Gr. Stud., 1898-1901; Non-Res. Stud., 1901-02. — Shattuck Scholar, 1898-1900. — Morgan Fellow, 1900-01. — Student of Mathematics, at Göttingen.  
Instructor in Mathematics, Massachusetts Institute of Technology.

## WILLIAM JAY HALE.

A.B. (*Miami Univ., O.*) 1897, A.M. (*ibid.*) 1897, A.B. (*Harvard Univ.*) 1898, A.M. (*ibid.*) 1899, Ph.D. (Chemistry) 1902. — Res. Gr. Stud., 1898-1902. — University Scholar, 1898-99; Thayer Scholar, 1899-1900. — Assistant in Chemistry, 1900-01; Austin Teaching Fellow in Chemistry, 1901-02. Student of Chemistry, at Berlin.

## Rogers Fellowships.

## JOHN TAGGART CLARK.

A.B. 1898, A.M. 1899, Ph.D. (Romance Philology) 1901. — Res. Gr. Stud., 1898-1901; Non-Res. Stud., 1901-02. — University Scholar, 1898-99; Townsend Scholar, 1899-1900; Shattuck Scholar, 1900-01. — Student of Romance Languages, at Paris.  
Now continuing his studies at Paris, as John Thornton Kirkland Fellow.

## HAROLD DE WOLF FULLER.

A.B. (*Adelbert Coll. of Western Reserve Univ., O.*) 1897, A.B. (*Harvard Univ.*) 1898, A.M. (*ibid.*) 1900, Ph.D. (English Philology) 1902. — Res. Gr. Stud., 1897-Feb. 1899, and Feb. 1900-02. — University Scholar, 1900-01; Christopher M. Weld Scholar, 1901-02.  
Student of English Philology and Comparative Literature, at Leyden.

## CARL NEWELL JACKSON.

A.B. 1898, A.M. 1899, Ph.D. (Classical Philology) 1901. — Res. Gr. Stud., 1898-1901; Non-Res. Stud., 1901-02. — University Scholar, 1898-99; Townsend Scholar, 1899-1900; Shattuck Scholar, 1900-01. — Student of Classical Philology, at Berlin.  
Instructor in Greek and Latin, St. Paul's School, Concord, N.H.

## ROLAND GREENE USHER.

A.B. 1901, A.M. 1902. — Res. Gr. Stud., 1901-02. — Ricardo Prize Scholar, 1901-02.  
Student of History, at Oxford.

## Parker Fellowships.

## GEORGE HUBBARD BLAKESLEE.

A.B. (*Wesleyan Univ., Conn.*) 1893, A.M. (*ibid.*) 1897, A.M. (*Harvard Univ.*) 1900. — Res. Gr. Stud., 1898-1901; Non-Res. Stud., 1901-02. Townsend Scholar, 1899-1900. — Student of History, at Berlin.  
Continuing his studies at Oxford.

## JOHN WILLIAM BRADSHAW.

A.B. (*Univ. of Michigan*) 1900, A.M. (*Harvard Univ.*) 1902. — Res. Gr. Stud., 1900-02. — Leverett Saltonstall Scholar, 1901-02.  
Student of Mathematics, at Strasburg.

## GEORGE WILLIAM HEIMROD.

A.B. 1898, A.M. 1899, Ph.D. (Chemistry) 1901. — Res. Gr. Stud., 1898-1901; Non-Res. Stud., 1901-02. — Thayer Scholar, 1899-1900. — Assistant in Chemistry, 1898-99; Austin Teaching Fellow in Chemistry, 1900-01. — Student of Chemistry, in Europe.  
Continuing his studies at Berlin.

## DONALD CAMERON.

(See Edward Austin Fellowships, 1901-02.)

## CHARLES WILLIAM PRENTISS.

A.B. (*Middlebury Coll., Vt.*) 1896, A.M. (*ibid.*) 1897, A.M. (*Harvard Univ.*) 1898, Ph.D. (Biology) 1900. — Res. Gr. Stud., 1897-1900. — Townsend Scholar, 1897-98. — Assistant in Zoölogy, 1898-1900; Instructor in Anatomy, Harvard Veterinary School, 1900-01. — Student of Zoölogy, in Europe.  
Continuing his studies at Strasburg, as Parker Fellow.

CHARLES WILLIAM PRENTISS.  
*Reappointed.*

## John Thornton Kirkland Fellowship.

## ROBERT HUNTINGTON FLETCHER.

A.B. (*Dartmouth Coll., N.H.*) 1896, A.M. (*Harvard Univ.*) 1898, Ph.D. (English Philology) 1901. — Res. Gr. Stud., 1897-98 and 1899-1901; Non-Res. Stud., 1901-02. — Townsend Scholar, 1899-1900; Christopher M. Weld Scholar, 1900-01. — Student of English Philology, in Europe.  
Assistant Professor of English, Washington University, St. Louis, Mo.

## JOHN TAGGART CLARK.

(See Rogers Fellowships, 1901-02.)

1901-02.

1902-03.

## James Walker Fellowship.

## KNIGHT DUNLAP.

Ph.D. (*Univ. of California*) 1899, Litt.M. (*ibid.*) 1900, A.M. (*Harvard Univ.*) 1901. — Res. Gr. Stud., 1900-02. — Student of Philosophy, at this University. Assistant in the Psychological Laboratory of the University of California.

## WILLIAM ERNEST HOCKING.

(See Henry Bromfield Rogers Memorial Fellowship, 1901-02.)

## John Tyndall Scholarship.

## EDWIN PLIMPTON ADAMS.

S.B. (*Beloit Coll., Wis.*) 1899, S.M. (*Harvard Univ.*) 1901. — Res. Gr. Stud., 1899-1901; Non-Res. Stud., 1901-02. — Whiting Fellow, 1899-1901. — Student of Physics, at Berlin.

Now continuing his studies at Cambridge, England, as John Tyndall Scholar.

## EDWIN PLIMPTON ADAMS.

Reappointed.

## Robert Treat Paine Fellowship.

## ANDREW LIGHT HORST.

A.B. 1900, A.M. (*Columbia Univ., N.Y.*) 1901. — Res. Gr. Stud., 1901-02. — Student of Social Science, at this University. In business, at Omaha, Neb.

## FRANCIS REEVE COPE, JR.

A.B. (*Haverford Coll., Pa.*) 1900, A.B. (*Harvard Univ.*) 1901, A.M. (*ibid.*) 1902. — Res. Gr. Stud., 1901-02. Student of Social Science, at New York.

## Henry Lee Memorial Fellowship.

## ROBERT MORRIS.

Reappointed.

A.B. (*Univ. of Nashville, Tenn.*) 1897, A.B. (*West Virginia Univ.*) 1899, LL.B. (*ibid.*) 1899, A.M. (*ibid.*) 1900, A.M. (*Harvard Univ.*) 1902. — Res. Gr. Stud., 1900-02. — Student of Political Economy, at this University.

Now continuing his studies, at the University of Chicago.

## LEON CARROLL MARSHALL.

A.B. (*Ohio Wesleyan Univ.*) 1900, A.B. (*Harvard Univ.*) 1901, A.M. (*ibid.*) 1902. — Res. Gr. Stud., 1901-02. — Assistant in History, 1901-02.

Student of Political Economy, at this University.

## Ozias Goodwin Memorial Fellowship.

## JAMES AUGUSTUS GEORGE.

A.B. (*Univ. of New Brunswick*) 1896, A.B. (*Harvard Univ.*) 1898, A.M. (*ibid.*) 1901. — Res. Gr. Stud., 1899-1902. — University Scholar, 1900-01. — Assistant in Government, 1899-1900. — Student of History and Government, at this University. Assistant in Government, at this University.

## EMERSON DAVID FITE.

A.B. (*Yale Univ.*) 1897. — Res. Gr. Stud., 1901-02. — Townsend Scholar, 1901-02. Student of History, at this University.

## Henry Bromfield Rogers Memorial Fellowship.

## WILLIAM ERNEST HOCKING.

A.B. 1901, A.M. 1902. — Res. Gr. Stud., 1901-02. — Student of Philosophy, at this University.

Now continuing his studies at Göttingen, as James Walker Fellow.

## RUFUS EDWARD MILES.

A.B. (*Amherst Coll.*) 1899, A.M. (*ibid.*) 1902. — Res. Gr. Stud., 1899-1900. Student of Philosophy, at this University.

## Hemenway Fellowship.

## HENRY MINOR HUXLEY.

A.B. 1899, A.M. 1902. — Res. Gr. Stud., 1901-02. — Student of Anthropology, at this University.

In business in Chelsea.

## GEORGE BYRON GORDON.

S.B. 1901. Student of Anthropology, at this University.

1901-02.

## John Harvard Fellowships.

HARRY NELSON GAY.

*Reappointed.*

A.B. (Amherst Coll.) 1891, A.M. (Harvard Univ.) 1896.—Res. Gr. Stud., 1894-95 and 1896-97; Non-Res. Stud., 1895-96 and 1900-02.—Student of History, in Rome.

Continuing his studies in Italy, as John Harvard Fellow.

ROGER BIGELOW MERRIMAN.

*Reappointed.*

A.B. 1896, A.M. 1897, Litt.B. (Univ. of Oxford, England) 1899, Ph.D. (History) 1902.—Res. Gr. Stud., 1896-97 and 1898-1900; Non-Res. Stud., 1900-02.—Assistant in History, 1899-1900.—Student of History, in Europe.

Instructor in History, at this University.

1902-03.

HARRY NELSON GAY.

*Reappointed.*

APTHORP GOULD FULLER.

A.B. 1900, A.M. 1902.—Res. Gr. Stud., 1900-02.

Student of Philosophy, at Oxford.

WILLIAM HENRY PAINE HATCH.

A.B. 1896, A.M. 1899, S.T.B. (Episcopal Theol. School, Cambridge) 1902.—Res. Gr. Stud., 1896-1898.

Student of Classical Philology, at this University.

MORTIMER PHILLIPS MASON.

A.B. 1899, A.M. 1900.

Student of Philosophy, at this University.

FRANCIS SAMUEL PHILBRICK.

(See Edward Austin Fellowships, 1901-02.)

## Whiting Fellowships.

GUSTAVUS ADOLPHUS ANDEREGG.

S.B. (Oberlin Coll., O.) 1899, A.B. (Harvard Univ.) 1900, A.M. (*ibid.*) 1902.—Res. Gr. Stud., 1900-02.—Assistant in Physics, 1900-01.—Student of Physics, at this University.

Electrical engineer in Chicago.

CHARLES MONRO PASEA.

S.B. (Dalhousie Univ., N.S.) 1900, A.B. (Harvard Univ.) 1901.—Res. Gr. Stud., 1901-02.—Student of Physics, at this University.

Now teaching in Trinidad.

JOSEPH CLEVELAND PEARSON.

A.B. (Bowdoin Coll., Me.) 1900.—Res. Gr. Stud., 1901-02.—Student of Physics, at this University.

Continuing his studies at this University, as Whiting Fellow.

HARVEY NATHANIEL DAVIS.

A.B. (Brown Univ., R.I.) 1901, A.M. (*ibid.*) 1902.

Student of Physics, at this University.

JOHN L HOGG.

A.B. (Univ. of Toronto, Ont.) 1899, A.M. (Harvard Univ.) 1902.—Res. Gr. Stud., 1901-02.—University Scholar, 1901-02.

Student of Physics, at this University.

JOSEPH CLEVELAND PEARSON.

*Reappointed.*

## South End House Fellowship.

ROSWELL FOULK PHELPS.

*Reappointed.*

S.B. (Amherst Coll.) 1899, A.B. (Harvard Univ.) 1900, A.M. (*ibid.*) 1901.—Res. Gr. Stud., 1900-02.—Student of Sociology, at this University.

In municipal employment, Boston.

ALBERT BENEDICT WOLFE.

A.B. 1902.

Student of Sociology, at this University.

## Charles Eliot Norton Fellowship.

OLIVER SAMUEL TONKS.

A.B. 1898, A.M. 1899.—Res. Gr. Stud., 1898-1901; Non-Res. Stud., 1901-02.—University Scholar, 1899-1901.—Student of Classical Archaeology, in Athens.

Now continuing his studies, at this University, as Leverett Saltonstall Scholar.

HAROLD RIPLEY HASTINGS.

A.B. (Dartmouth Coll., N.H.) 1900, A.M. (Harvard Univ.) 1902.—Res. Gr. Stud., 1901-02.

Student of Classical Archaeology, in Athens.

1901-02.

1902-03.

## Edward Austin Fellowships.

## DONALD CAMERON.

A.B. (*Univ. of Texas*) 1896, A.M. (*ibid.*) 1896, A.M. (*Harvard Univ.*) 1900, PH.D. (*Classical Philology*) 1902. — Res. Gr. Stud., 1898-1902. — Townsend Scholar, 1900-01. — Student of Classical Philology, at this University.  
Student of Classical Philology, in Berlin, as Parker Fellow.

## JOSEPH HORACE FAULL.

A.B. (*Univ. of Toronto, Ont.*) 1898. — Res. Gr. Stud., 1901-02.  
Student of Botany, at this University.  
Instructor in Botany, at the University of Toronto.

## PRENTISS CHENEY HOYT.

A.B. (*Middlebury Coll., Vt.*) 1889, A.M. (*ibid.*) 1892, A.M. (*Harvard Univ.*) 1899, PH.D. (*English Philology*) 1902. — Res. Gr. Stud., 1898-1902. — Shattuck Scholar, 1900-01. — Student of English, at this University.  
Instructor in English, at this University.

## FRANCIS SAMUEL PHILBRICK.

S.B. (*Univ. of Nebraska*) 1897, A.M. (*ibid.*) 1899, PH.D. (*History*) 1902. — Res. Gr. Stud., 1899-1902. — University Scholar, 1899-1900; Morgan Fellow, 1900-01. — Student of History, at this University.  
Now continuing his studies in Europe, as John Harvard Fellow.

## EARNEST CARY.

A.B. (*Gates Coll., Neb.*) 1898, A.B. (*Harvard Univ.*) 1900, A.M. (*ibid.*) 1901. — Res. Gr. Stud., 1900-02. — Thayer Scholar, 1900-01; Shattuck Scholar, 1901-02.  
Student of Classical Philology, at this University.

## LEON JACOB COLE.

A.B. (*Univ. of Michigan*) 1901.  
Student of Zoology, at this University.

## ROBERT BELL MICHELL.

A.B. (*Univ. of Toronto*) 1900, A.M. (*Harvard Univ.*) 1901. — Res. Gr. Stud., 1900-02. — Townsend Scholar, 1901-02.  
Student of Romance Philology, at this University.

## WILFRED NEWSOME STULL.

S.B. (*State Univ. of Iowa*) 1898, S.M. (*ibid.*) 1899. — Res. Gr. Stud., 1901-02. — George and Martha Derby Scholar, 1901-02.  
Student of Chemistry, at this University.

## Travelling Fellowship in Indic Philology (special for 1902-03).

## DAVID BRAINERD SPOONER.

A.B. (*Leland Stanford Jr. Univ., Cal.*) 1896.  
Student of Indic Philology, at Benares.

The holders of fellowships consist of two classes of students: first, those that have ordinarily received the Doctor's degree and are continuing studies and researches of a highly specialized nature for a year or two before taking up professional work either as teachers, or as men of science, or in literature; and, secondly, a group of men, younger academically, whom the stipend of the fellowships enables to carry on studies normally for a higher degree either at this or at some other university. Of the twenty-five fellows in 1901-02 six were already Doctors of Philosophy when they became fellows, and four others received this degree at this University at the close of the year. Of the remaining fifteen, two only have no Harvard degree (A.B.'s of Toronto and Bowdoin); two were Harvard A.B.'s only; the remaining eleven were already Masters (seven) or became Masters at the close of the year (four).

The Doctors and holders of the higher fellowships are perhaps the men through whom the Graduate School does and expects to do its most important work for the enlargement of learning and science and for their advancement in the community. They are chosen men, believed to be of ability and great promise. Of the twenty-five

holders of fellowships in 1901-02 nine are now engaged in teaching : seven of them in colleges (one being an assistant professor) or universities (including two here), and two in secondary schools. Three are in business, and one is in municipal employment. The remaining twelve of the twenty-five are continuing their studies, nine of them abroad, seven being holders of travelling fellowships from this University; two are resident students at this University. Eight of the fellowship holders for 1901-02 hold similar appointments for the present year (1902-03). An unusually large proportion of the fellows of 1901-02 are continuing their studies.

The fact has already been pointed out that, for good reasons, the average age of members of the Graduate School must be higher than of men in the professional schools in general, even in those that are founded on a college education. A considerable number of the men who come to the Graduate School are obliged, before taking up advanced studies, to spend time in earning the money that will enable them to carry on these studies. Many of them have discovered their calling in the actual and often highly successful work of teaching, and have also perceived the deficiencies in their equipment, which they seek to make good by advanced studies. In the present organization of our educational system this must be so. It thus happens that excellent candidates for financial aid in the Graduate School will be oldish men. Table XIV gives the ages of the seventy-two men who held fellowships and scholarships in 1901-02. Leaving out of consideration the three exceptional cases of men over thirty-two, the average age of the remaining sixty-nine is twenty-six. To fix this age as a maximum, above which men could not receive appointments, would obviously be a hardship.

TABLE XIV. — AGE OF GRADUATE FELLOWS AND SCHOLARS :  
1901-02.

	20	21	22	23	24	25	26	27	28	29	30	31	32	34 to 38	Total.
Non-Resident Fellows . . . . .	..	..	..	1	..	3	3	2	..	..	1	1	..	..	11
Resident Fellows . . . . .	..	1	1	2	1	3	1	..	3	..	..	1	1	..	14
Austin Scholars . . . . .	..	..	..	..	..	..	..	1	1	..	2	..	..	1	5
Holder of Scholarships paying tuition only . . . . .	..	..	1	1	2	1	..	..	..	2	1	..	..	1	9
Other Resident Scholars . . . . .	1	3	3	4	3	6	2	2	3	..	2	..	3	1	33
Total . . . . .	1	4	5	8	6	13	6	5	7	2	6	2	4	3	72

FELLOWSHIPS AND SCHOLARSHIPS: APPLICATIONS AND APPOINTMENTS.

The following table (XV) gives the usual statistics relative to the applications and appointments for the three successive years 1900-01, 1901-02, and 1902-03:—

TABLE XV. — FELLOWSHIPS AND SCHOLARSHIPS (1900-02).

1. *Applications and Appointments.*

	1900-01.	1901-02.	1902-03.
Spring applicants for reappointment or promotion . . . . .	51	42	46
Spring applicants for a first appointment . .	256	225	210
Later applicants . . . . .	47 354	56 323	57 313
Appointed to fellowships* . . . . .	19	21*	21*
Appointed to scholarships* . . . . .	57	43*	50*
Appointed instructors, teaching fellows, or assistants . . . . .	27 103	15 79	28 99
Deduct for repetitions . . . . .	1	0	4
	102	79	95
Entered or continued in the Graduate School without receiving any of the above-named appointments . . . . .	66	68	55
Entered undergraduate classes of Harvard University . . . . .	3	3	8
Entered other departments of the University	4 73	5 76	5 68
Applicants who were at the University in the year following their applications . .	175	155	161
Applicants not at the University in that year	179	168	150
	354	323	311

\* These figures do not include the John Harvard fellowships (two in 1901-02; five in 1902-03), the Hemenway fellowship, and the Charles Elliot Norton fellowship, the special fellowship in Indic Philology for 1902-03, nor the scholarships of the Harvard Clubs of Chicago (not awarded to a Graduate Student in 1902-03), San Francisco, and St. Louis, nor the Robert C. Winthrop scholarship (in 1902-03). If these be added the enumerations here will agree with the figures given on page 158.

2. *Classification of Applicants and Appointees.*

	1900-01.		1901-02.		1902-03.	
	Applicants.	Appointees.	Applicants.	Appointees.	Applicants.	Appointees.
Students of Philology . . . . .	128	27	112	19	115	22
Students of Philosophy, History, or Political Science . . . . .	123	23	97	20	101	21
Students of Mathematics, Physics, or Chemistry	61	15	67	16	55	17
Students of Natural History . . . . .	38	11	44	9	34	8
Students of other branches, or unclassified . .	4	0	3	0	8	3
	354	76	323	64	313	71
Students in the Graduate School . . . . .	110	49	109	33	80	41
Students in Harvard College . . . . .	43	6	28	5	35	6
Students in other Departments of the University	3	1	4	0	5	1
Former students in some Department of the University . . . . .	38	7	16	4	36	5
Persons never previously members of the University . . . . .	160	13	166	22	157	18
	354	76	323	64	313	71
Harvard Bachelors of Arts or Science, not previously graduated elsewhere . . . . .	31	8	29	10	23	9
Harvard Bachelors of Arts or Science, previously graduated elsewhere . . . . .	24	6	17	6	23	9
Graduates of other institutions, not Harvard Bachelors of Arts or Science . . . . .	237	59	235	46	210	46
Undergraduates of Harvard College, not already graduated elsewhere . . . . .	28	3	19	2	26	7
Undergraduates of other institutions and other non-graduates . . . . .	34	0	23	0	31	0
	354	76	323	64	313	71

Various comments may be made on this table. There has been for three years a gradual falling-off in the number of applications for Graduate aid. Curiously enough the number of applicants in each year is nearly the same as the number of students in the School in the following year, though just about one-half of the applicants do not come to the University in that year. Of the disappointed applicants in 1901 about thirty per cent. entered or remained in the School in 1901-02, while of those of 1902 about twenty-six per cent.

are in the School in the current year. Of the whole number of applicants in 1902 less than one in four was successful. As usual, the applicants in philology, philosophy, history, and political science outnumber those in the mathematical, physical, and natural sciences by more than two to one. Of the applicants (in 1902) in philology less than one in five was successful; in philosophy, history, and political science about one in five; in the mathematical and physical sciences one in three; in natural history one in four. Of applicants who had previously been in the School one-half received appointments; of those who had never been members of the University about one in eight was successful. Of Harvard Bachelors more than one in three was successful, while of the very large number that had no Harvard degree more than one in five received an appointment. These proportions, which differ but slightly from year to year, show that it is an advantage to the applicant to be a holder of the Harvard Bachelor's degree or to have studied at this University. At the same time the large number of men not of this class (in 1902 forty-six appointments out of two hundred and forty applicants who held no first degree from Harvard) shows that graduates of other colleges are not discriminated against.

In making the nominations for appointments the committee in charge does not apportion the nominees among the several Departments with reference to the number of applicants or students in these Departments, but aims to select the most meritorious candidates individually. Consequently the proportion of appointments to applicants or students in the several Departments varies somewhat from year to year.

#### INSTRUCTORSHIPS AND ASSISTANTSHIPS; NEW FELLOWSHIPS AND SCHOLARSHIPS.

A small number of the members of the Graduate School, beside carrying on their studies, usually for a higher degree, serve the University as salaried teachers or assistants under the Faculty of Arts and Sciences, by regular appointment of the Corporation. The amount of their work as students varies from half a course, or what technically is one-eighth of full work, to four courses, or full work. There were in 1901-02 fifty-five such persons; seven of them were instructors, fifteen were Austin Teaching Fellows, and thirty-three were assistants. In the current year there are (in December, 1902) fifty-nine such persons, — ten instructors, forty assistants, and nine Austin Teaching Fellows. There are in fact in 1902-03 seventeen



Austin Teaching Fellows in the service of the Faculty of Arts and Sciences, but only nine of them are registered as Graduate Students. It would seem to be just, if these men are to be recognized as students and belonging to the same category with the ordinary fellows, except that they do teaching in addition to being fellows, that they should be registered in the School, and that thus the usual supervision might be exercised over their work.

Out of the three hundred and fifteen members of the School in 1901-02, one hundred and twenty-five—or nearly forty per cent. (as against thirty-three per cent. in the previous year)—received stipends, either as teachers, assistants, fellows, or scholars. Furthermore, other members of the School held proctorships, parietal or examination, whereby their expenses were reduced.

One new fellowship and three new scholarships were established in 1901-02 for Graduate Students. The fellowship is known as the Nelson Robinson Jr. Travelling Fellowship in Architecture, and is designed for distinguished Graduate Students in architecture. Travel and study in Europe are prescribed, and the holder of the fellowship is not to be more than twenty-six years of age at the time of his appointment. The annual stipend is \$1,000, larger by about \$300 than any other fellowship now awarded.

The new scholarships—of \$300 each—are for Resident Students. They are founded from the Edward Austin Fund; two are for architecture and one for landscape architecture. Harvard Bachelors of Science in these subjects are alone eligible.

There are now five classes of stipendiary appointments maintained from the Edward Austin Fund: four Edward Austin Fellowships (\$500 each), an undetermined number of Austin Teaching Fellowships (\$500 each), eight Austin Scholarships for Teachers (\$250 each), and the three scholarships mentioned above. Much confusion has arisen from the similarity of the names in these cases, and the Committee on Fellowships is of the opinion that a new name should be devised for the Austin Teaching Fellowships, which, as at present administered, are in fact instructorships rather than fellowships.

The Faculty adopted toward the close of the year a regulation which provides that any fellowship (other than an Austin Teaching Fellowship) or any scholarship to which a person has been recommended for appointment by the Faculty of Arts and Sciences will ordinarily be vacated by the subsequent marriage of the holder. In the year 1901-02 forty-seven members of the School were married men, and of these eleven held fellowships or scholarships, three being Austin Teaching Fellows. The regulation does not mean that

married men are hereafter to be excluded from appointment — for such persons are not infrequently excellent candidates from every point of view — but only that a marriage which is entered upon apparently on the strength of an appointment shall disqualify.

The Association of American Universities, which was founded in 1900 “for the purpose of considering matters of common interest relating to Graduate studies,” held its third annual conference in February, 1902, at Chicago, with Professor Briggs as the representative of this University. Among the topics discussed were: “The Doctor’s Dissertation,” including its scope and the importance of requiring its publication; “The Migration of Graduate Students”; “Research in the University Sense”; and “The Degree of Master of Arts.”

In the discussion of the first topic it became apparent that Harvard and Yale are at present alone among American universities of standing in not requiring the publication of the Doctor’s dissertation, and that Yale is ready, under certain conditions, to adopt the requirement, conditions that would assuredly be acceptable to Harvard University. As I have more than once urged, most recently in the current number of the *Harvard Graduates’ Magazine*, justice to the writers of dissertations, our obligations to the world of scholarship from which the results of research should not be withheld, our relation to the common ideals of university endeavor, and a due regard for our own standards and the improvement of our own efficiency, demand the adoption of such a requirement at this University. The chief difficulty is the financial one — the burden which the requirement would possibly impose upon about one-third of the writers of dissertations, for ordinarily about two-thirds of the dissertations are printed without expense to the writers. A foundation for the publication of dissertations whose publication is not secured through the usual channels, would be highly serviceable; it would in effect be a fund for the further endowment of research, and could be used either in extending the scope of the large number of official scientific publications of the University that are now regularly issued by several of the Departments, or in special subventions — such as are made by learned societies — whereby Doctors could be enabled to publish their theses independently. In the absence of such assistance the writers of dissertations might avail themselves of the opportunities offered by an enterprising publishing firm in Chicago, which now undertakes to publish, in a series entitled *Dissertationes Americanae*, “theses accepted by the Faculties of American Universities for the degree of

Doctor of Philosophy," at a nominal expense to the writers and under competent editorial supervision.

Many friends of the Graduate School have long thought that its attractiveness and usefulness would be greatly enhanced if the School possessed a house, or group of houses, of its own, in which a common life could be lived, an establishment not unlike some of the halls of English colleges, or the hall proposed at Princeton University for its Graduate School. The Harvard Graduate Student misses much of the helpfulness and the stimulus of the associated intellectual and social life which are, to a large extent, gained by undergraduates and by students in the professional schools, the latter of whom are, for the most part, by the nature of their common studies, thrown intimately together. The denial to all but undergraduates of the privilege of rooming in the College Yard after the current year will tend yet more to isolate the ordinary Graduate Student. A Graduates' Quadrangle or Hall, such as has been suggested, would prove of the highest value in promoting the sense of union and fellowship and of the solidarity of interests on the part of those who pursue the scholar's life, which is among the most powerful agents in the development of intellectual as well as moral character. These buildings should contain a sufficient number of sleeping rooms and studies for two or three hundred students and young instructors, large common rooms, reading rooms, probably a refectory and dining hall, and other apartments for the use of the societies or clubs, scientific or other, which are made up mostly of Graduate Students.

It is obvious to one who examines the statistics of the Graduate School for the last three years that the School is not growing as it should, and that men from other colleges are not coming to it in relatively large proportions.\* Other departments increase rapidly, and a School that has all the advantages that are summarized in your last Report (page 23) should draw greater numbers. Perhaps the most obvious explanation of this lack of growth is that these

* NEW MEN FROM OTHER COLLEGES: 1899-1903.				
	Total membership of the School.	New men from other Colleges.	All others.	Proportion of new men from other Colleges.
1899-1900 . . . . .	341	111	230	32.5%
1900-01 . . . . .	353	121	232	34.8%
1901-02 . . . . .	315	96	219	30.5%
1902-03 (to Dec. 1, 1903) .	319	107	212	33.5%

advantages are not so well known throughout the country as they should be. A more extended publication of them through the timelier issue of programmes of instruction and other information would certainly be useful; but there are other retarding causes. At the present time not a few students who in the past might have sought the degree of Master of Arts in the Graduate School are enabled to get it by work done in their Senior Year in Harvard College, supplementary to that done for the degree of Bachelor of Arts (in 1901-02 there were nineteen such persons; 1902-03, twenty-eight; this year there are forty-five). Furthermore, other colleges and universities are, as never before, offering attractions of various sorts to Graduate Students: enlarged programmes of advanced instruction; easier access, through the provision of Summer Courses of instruction and otherwise, to the higher degrees, and that too to degrees whose standards, at least on paper, appear to be higher than the Harvard degrees of Master of Arts and Doctor of Philosophy; great pecuniary inducements in the more abundant provision of scholarships and in the almost universal remission of tuition fees for students that ask such remission. All these things make it incumbent upon us to study the problem.

The formal opening meeting of the School for the current year (1902-03) was held on Thursday evening, October 2, in the Faculty Room. The principal address was delivered by Professor Josiah Royce, on the liberalizing influence of special study; this address will appear in the March number of the *Graduates' Magazine*, 1903. A short address was made in behalf of the Graduate Club by Mr. A. H. Carpenter, President of the Club, and this was followed by a reception.

JOHN HENRY WRIGHT, *Dean*.

## THE DIVINITY SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY :—

SIR, — I have the honor of presenting the following report concerning the Divinity School for the year 1901–02.

The death of Professor Joseph Henry Thayer on November 26, 1901, was a grave loss to the School. Professor Thayer's acknowledged leadership among American students of the New Testament gave distinction to the University; and his colleagues and pupils cherish the happy memory of his intellectual generosity, moral fidelity, and affectionate companionship. His loyalty to the School and his confidence for its future were manifested by his large bequest to its Library. Under the terms of this gift, 1,407 volumes and 1,058 pamphlets have been received, together with the valuable collection of papers which were connected with Professor Thayer's work as a member of the American Committee on the Revised Version of the New Testament.

Professor George Foot Moore, of Andover Seminary, began his service of the School in February, 1902, and his brother, the Rev. Edward Caldwell Moore, was elected Parkman Professor of Theology in February, though he did not enter upon his duties until October. Rev. Samuel Silas Curry, Ph.D., instructor in Elocution, retired in June, 1902, after a faithful and sympathetic service of six years; and an arrangement was made, in connection with the College and Law School, by which the same system of instruction in Elocution is to be applied to all these departments under the direction of Mr. Winter. These changes in our teaching staff, together with those of the year 1900–01, while involving serious losses, restore the Faculty of the School to its full strength in numbers, and give to the list of courses offered by the Faculty of Divinity a variety and a systematic arrangement unprecedented in the history of the School. Of these changes the most noteworthy is the expansion of the single course, given for many years by Dr. Everett, into a Department of the History of Religions, announced both in the Divinity School and in the list of courses offered by the Faculty of Arts and Sciences. This new Department is directed by Professor George F. Moore, with whom are associated seven other University Teachers, so that there are now exhibited systematically the resources of the University for instruction in Comparative Religion.

In the Dean's report for the year 1900-01 it was pointed out that each step in improving the standards of the School had temporarily involved a decrease of numbers, but that in each case a revival of numbers had soon occurred to justify the step. Thus, in 1886 the degree of A.B. was for the first time required of all candidates for the degree of B.D., and the number of students of Theology promptly dropped in 1887 from 25 to 16. In 1890 the School had recovered from this shrinkage, and in 1894 there were 50 students. In 1897-98 a more threatening step was taken in the increase of the fee from \$50 to \$150, and, as was anticipated, the attendance dropped in 1898 to 26. This second wave of reaction has now apparently spent its force, the attendance at the School having increased from 28 in 1900-01 to 37 in 1901-02. Two reforms of the most fundamental importance have thus been accomplished, not indeed without checking the natural growth of the School, but at least without involving a positive loss in numbers.

In considering the future prospects of the School, however, it is important to observe that by requiring a fee equal to that paid in Harvard College and in the Harvard Law School, the Divinity School has departed radically from the tradition of theological education in this country, and is confronted by a competition which makes large increase in numbers for the present improbable. The prevailing custom in schools for the ministry has long been to provide such education practically without cost. In many cases the expenses of living have been so abundantly met, and the opportunities for earning money have been so considerable, that a winter of theological study might be procured without any demand for self-denial or thrift. It is now generally admitted that the effect of this indiscriminate aid has been disastrous to the best interests of the Christian ministry; and in the more prudent schools there is a growing inclination to check the evil. An examination of the catalogues and announcements of nineteen of the principal Protestant seminaries of this country for 1901-02 indicates a distinct improvement in the administration of scholarship funds during the last twenty years.

Some schools still boldly maintain the theory that education for the ministry is a form of charity, and emphasize the complete freedom from expense which their students may anticipate by announcements like the following: "The expense of attending the Seminary has always been remarkably low, and every effort will be made to reduce it still further." The effect of this bidding for customers is made sufficiently obvious by the correspondence which reaches the Dean of a Theological School. Self-respecting and honorable as are

most of the letters of application made to him, there arrive each year some distressing letters which betray their writers as bargaining with various Schools, and as considering where the most lucrative opportunity is to be found. Grave temptations to enter the ministry are thus set before young men of meagre capacity, and many young men of force are deterred from a career, the entrance to which is made cheap and easy.

A majority of schools are, however, obviously concerned to find some method by which students may be aided without pauperization; or some equivalent for a tuition fee secured. A common practice is to make the amount of aid dependent on the grade of scholarship attained. Out of the nineteen seminaries considered, six announce that no student may receive scholarship aid if his rank falls below 75 per cent. Such a limitation is a distinct recognition of the evil of indiscriminate aid and a partial relief for it. Much, however, depends on the standard of excellence practically applied, and the method does not affect the aid given through free tuition and free — or partially free — room rent; for, in most cases, these charges are remitted to all comers.

Another method of securing some return for aid given is in the now widely extended practice of demanding work in outlying churches and missions as a condition of securing aid from the School. This method, which in some schools has practically become a department of school work, relieves the student of the sense of mendicancy; but is not without the disadvantage of detaching the student for a considerable fraction of the week from the work of the school. To make it a condition of receiving aid from the school that a student shall do much of his work outside the school would seem to subordinate the immediate duties of the school to the duties of a parish; and in the interest of practical efficiency, to defeat in some degree the purpose of academic training for which a School of Theology exists.

What would seem to be the natural method of meeting the difficulty of indiscriminate aid, through charging a substantial fee and administering scholarship aid, not primarily as a relief of poverty, but as a reward for distinguished work, has as yet found no widespread acceptance. Of the nineteen seminaries considered, only five announce any charge whatever for tuition, viz.: —

Harvard University . . . . .	\$150
Chicago University . . . . .	120
Boston University . . . . .	100
Tufts (\$100, including room-rent) . . . . .	60
Episcopal, Cambridge . . . . .	50

Of these, however, Boston University appears to give to every student a scholarship sufficient to cover tuition, besides its other aid. Something approaching this may be inferred from the statement of the circular of Chicago University. It is interesting to observe that four of these schools which regard the study of theology as deserving the same estimate of value as the study of other sciences are close neighbors to each other.

A rapid growth of numbers in the Divinity School of Harvard University is not to be expected while education for the ministry is still so generally regulated primarily in the interest of those who cannot pay their way. How far the general decrease in the number of candidates for the ministry is due to the overwhelming solicitations of commercial pursuits, and how far the seminaries themselves are defeating their own purposes and lessening the attractiveness of the ministry through their tradition of indiscriminate aid, may be questioned. It seems probable, however, that the freedom from financial anxiety and the denominational advantages which most schools offer to students are likely to be for the present sufficient to deter some young men from entering a school which demands a considerable fee and which has no organic relation with a special body of churches.

On the other hand, the Divinity School of this University—though in its past history by no means guiltless in the matter of indiscriminate aid—now has special advantages in leading the way to a more justifiable administration of scholarship funds. It has always been a small School, and is under no temptation to commend itself by increase of numbers to denominational support. It is able to offer, in the intellectual liberty and elective methods of the University, some compensating advantages to offset its unusual expenses. It, like Harvard College, has adequate scholarship funds which are administered on the same terms as those of Harvard College,—so that, as in Harvard College, ample encouragement is offered to students of high quality and promise. It has gained by its present policy the complete respect of the other Departments of the University, and students who enter it find themselves associating with the best students of the Graduate School in self-respecting fellowship. From the experience of the last few years it may be inferred that young men who are resolute enough to face the financial problem of such a School, and who can maintain their religious faith under the free conditions of a university, will not find themselves distrusted in the communion which they enter, but will on the contrary be regarded with unusual confidence and esteem. In any event, it is plain that an important function of our School is to



commend the profession of the ministry to young men of independent spirit, who desire no exceptional benefit of clergy and are not primarily dependent on denominational favor; and the change to the present policy has been accomplished, not only without loss in numbers, but also to the great advantage of the School in intellectual results, in self-respect and in standing among the Schools of the University.

The principles of administration in scholarship aid as now accepted may be illustrated by the following statement from the Committee on Scholarships, which represents their dealings with the applications made to them for the year 1902-03:—

Total number of applications for scholarships . . . . .	57
Of which were:	
Withdrawn . . . . .	8
Rejected . . . . .	18
Granted and declined . . . . .	8
Granted and accepted but later declined . . . . .	4
Granted and accepted . . . . .	29
Total . . . . .	57

Scholarships granted and accepted 1902-03:—

2 Williams fellowships of . . . . .	\$400
1 scholarship of . . . . .	320
5 scholarships of . . . . .	800
6 Hopkins scholarships of about . . . . .	290
2 scholarships of . . . . .	250
18 scholarships of . . . . .	200
29 scholarships, with total value of . . . . .	7,460

The progress of our purpose to create an undenominational school is indicated in the following table, which takes account of those of our students during the last ten years who have become ordained ministers or were already ordained:—

	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Unitarian Cong. . . . .	6	6	11	7	6	11	7	8	4	9
Trinitarian Cong. . . . .	3	6	7	8	4	4	1	2	3	2
Methodist Episcopal . . . . .	2	3	1	3	..	3	..	2	..	2
Presbyterian . . . . .	1	1	..	2	2	1	..	2	1	..
Protestant Episcopal . . . . .	2	..	..	3	4	..	3	1	..	1
Baptist . . . . .	..	..	2	1	1	..	2	1	2	2
Christian . . . . .	1	..	1	..	..	..	..	..	..	..
Lutheran . . . . .	1	..	..	..	..	..	..	..	..	1
Methodist Protestant . . . . .	1	..	..	..	..	..	..	..	..	..
Disciples . . . . .	..	..	4	..	..	..	1	1	..	..
Dutch Reformed . . . . .	..	..	..	..	1	..	..	..	..	..
New Church . . . . .	..	..	..	..	..	..	1	..	..	..
Free Baptist . . . . .	..	..	..	..	..	..	..	..	1	..
Universalist . . . . .	..	..	..	..	..	..	..	..	..	1

The thirty-seven students enrolled in the year 1901-02 were distributed as follows:—

Resident Graduates . . . . .	15
Senior Class . . . . .	7
Middle Class . . . . .	4
Junior Class . . . . .	7
Special Students . . . . .	<u>4</u>
Total . . . . .	37

Twenty-two colleges were represented as follows:—

Antioch College . . . . .	1	Rollins College . . . . .	1
Bates College . . . . .	1	Simpson College . . . . .	1
Bowdoin College . . . . .	1	Southern University . . . . .	1
Brown University . . . . .	3	University of Toronto . . . . .	1
Dartmouth College . . . . .	1	Trinity College . . . . .	1
Geneva College . . . . .	1	Tufts College . . . . .	1
Harvard University . . . . .	8	Valparaiso College . . . . .	1
Kenyon College . . . . .	1	Wesleyan University . . . . .	1
University of Maine . . . . .	1	Yale University . . . . .	1
University of Missouri . . . . .	1		
Muhlenberg College . . . . .	1		31
University of Pennsylvania . . . . .	1	Counted more than once . . . . .	2
Queen's University . . . . .	1		<u>29</u>

Sixteen theological seminaries were represented as follows:—

Andover Theological Seminary . . . . .	1
Allegheny Reformed Presbyterian Theological Seminary . . . . .	1
Bangor Theological Seminary . . . . .	1
Boston University . . . . .	2
University of Chicago . . . . .	1
Concordia Theological Seminary . . . . .	1
Theological Seminary, Evangelical Lutheran Church, Philadelphia, Pa. . . . .	1
Garrett Biblical Institute . . . . .	1
Harvard University . . . . .	1
Meadville Theological School . . . . .	4
Newton Theological Institution . . . . .	1
Divinity School of the Protestant Episcopal Church in Philadelphia . . . . .	1
Queen's University . . . . .	1
St. Lawrence University . . . . .	1
Tufts College . . . . .	1
Vanderbilt University . . . . .	1
	<u>20</u>
Counted more than once . . . . .	1
	19

Six members of the School were recommended for the degree of S.T.B., and four received the degree of A.M.

The address at the opening of the year was by Professor Fenn. His subject was: "The Minister's Debt to his Profession."

A Summer School was held, as in the three preceding years, from July 1 to July 18; the entire series of forty-five lectures being devoted to the subject: "Current Problems in Theology." The Faculty of the School was reinforced by representatives of Dartmouth College, the University of Chicago, Oberlin College, Northwestern University, St. Lawrence University, the Episcopal Theological School of Cambridge, and by the Rev. Charles F. Dole. The four sessions of the School have had the following record of attendance:—

	Men.	Women.	Total.
1899 . . . . .	96	9	105
1900 . . . . .	52	2	54
1901 . . . . .	84	5	89
1902 . . . . .	74	4	78

The distribution by denominations, in the case of ministers attending in the four years, was as follows:—

	Orthodox Congregational.	Unitarian Congregational.	Episcopalian.	Universalist.	Baptist.	Presbyterian.	Disciples.	Methodist.	Free Baptist.	Lutheran.
1899 . . . . .	27	17	16	14	5	3	..	..	..	..
1900 . . . . .	17	6	3	14	6	..	3	3	..	..
1901 . . . . .	28	12	11	14	5	2	..	10	1	1
1902 . . . . .	28	7	15	3	5	1	1	8	1	1

The following is a list of the Courses of Instruction offered in the School in the year 1901-02. With each course is a statement of the number of students electing it from the Divinity School, the Graduate School, and from the College. It is not practicable to discriminate accurately between instruction given by members of the Divinity Faculty to students not in the Divinity School, and elections made by Divinity students of College Courses, for with the exceptions of the Departments of Homiletics and Theology all the Departments of the Divinity School are represented in the courses offered by the Faculty of Arts and Sciences. Classifying, however, all Professors of the Divinity School as of that Department, it appears that the courses opened by the Divinity Faculty to students of the College and the Graduate School were elected by no less than 205 students; while, on the other hand, Divinity students made election of College studies in 1901-02 to the amount of 35 courses, so that the contri-

bution of the Divinity Faculty to the common stock of University courses was about six times that made by instructors not of the Divinity Faculty to students of the Divinity School. Of these 35 elections 27 were in the Department of Philosophy, and half the others in the Department of Economics.

There is appended to the list of regular courses a list of the lectures of the Summer School. Almost all of the students enrolled in the Summer School attended all its courses.

## COURSES OF INSTRUCTION.

### OLD TESTAMENT.

1. Dr. HAYNES. — Hebrew. — Davidson's Introductory Hebrew Grammar. Explanation of parts of Genesis and of the Psalm-book. 8 Col.
2. Professor TOY. — Hebrew (second course). — Syntax. — Interpretation of parts of the Prophets and the Poetical Books. Text-criticism. 8 Col.
- 3 <sup>1</sup>/<sub>2</sub>. Dr. HAYNES. — Jewish Aramaic. Kautzsch's *Biblisch-Aramäische Grammatik*. — Interpretation of parts of Ezra, Daniel, and the Targums. *Half-course*.
4. Professor KELLNER (Episcopal Theological School). — History of Israel, political and social, till the capture of Jerusalem by the Romans. Text-books, lectures, and theses. 8 Div., 30 Col.
5. Professor TOY. — History of pre-Christian Hebrew Literature. 8 Div., 1 Gr., 4 Col.
6. Professor TOY. — History of the Hebrew Religion, with comparison of other Semitic religions. 8 Div.
7. Dr. HAYNES. — Assyrian. Lyon's *Assyrian Manual*. Delitzsch's *Assyrian Grammar*. Delitzsch's *Assyrische Lesestücke*, ed. 4. 1 Col.
20. Research courses. The instructors will arrange and supervise for any properly prepared student a line of special study on such topic as may be agreed on.

### NEW TESTAMENT.

- 2 <sup>1</sup>/<sub>2</sub>. Asst. Professor ROPES. — New Testament Introduction. — The origin and history of the New Testament writings, including the formation of the Canon. *Half-course*. 10 Div., 1 Gr., 3 Col.
3. Asst. Professor ROPES. — The Synoptic Gospels. 5 Div., 1 Col.
8. Asst. Professor ROPES. — The Epistles of Paul. — Selected portions. 2 Div., 1 Col.
- 15 <sup>1</sup>/<sub>2</sub>. Asst. Professor ROPES. — New Testament Theology. — The Teaching of Jesus Christ, and the Theological and Ethical Ideas of the New Testament Writers. *Half-course*. 18 Div., 1 Gr., 3 Col.
- 22 <sup>1</sup>/<sub>2</sub>. Dr. HAYNES. — Classical Aramaic (Syriac). Rödiger's *Chrestomathia Syriaca* (ed. 3). The Peshitto version of the New Testament. *Half-course*.
20. Asst. Professor ROPES. — Advanced study and research.

## CHURCH HISTORY.

1. Professor EMERTON. — The First Eight Christian Centuries. — The conflict of Christianity with Paganism. Origin and development of the Roman Papacy to its alliance with the Frankish State. The Germanic races as the basis of a new Christian civilization. 9 Div., 12 Col.
3. Professor EMERTON. — The Era of the Reformation in Europe, from the rise of Italian Humanism to the close of the Council of Trent, 1350-1563. 8 Div., 8 Gr., 9 Col.
- 6 *hf.* Professor EMERTON. — Selected Topics from the Canon Law, with especial reference to the development of the Church Constitution. *Half-course.*
- 20a. Professor EMERTON. — Advanced study and research. *Once a week.* 2 Div.

## COMPARATIVE RELIGION.

- 2 <sup>3</sup>/<sub>hf.</sub> Professor G. F. MOORE. — The Origins of Religion. *Half-course.* 4 Div.

## THEOLOGY.

4. Professor FENN. — Outlines of Christian Theology. 6 Div.
- 5 <sup>3</sup>/<sub>hf.</sub> Professor FENN. — New England Theology. *Half-course.* 2 Div.

## SOCIAL QUESTIONS.

1. Professor PEABODY. — The Ethics of the Social Questions. — The modern social questions: Charity, the Family, Temperance, and various phases of the Labor Question, in the light of ethical theory. Lectures, special researches, and required reading. 10 Div., 7 Gr., 119 Col.
20. Professor PEABODY. — Sociological Seminary. Subject for the year: The Ethics of Jesus Christ. 9 Div.

## HOMILETICS AND PASTORAL CARE.

- 1 *hf.* Asst. Professor HALE. — The structure and analysis of sermons. *Half-course.* General exercise. 10 Div.
2. Professor PEABODY and Asst. Professor HALE. — Each student writes eight sermons during the year, of which some are preached before the class and criticised by students and instructor; some are preached before the instructor and a member of the class and criticised by them; and the rest are criticised by the instructor privately. This course may be taken twice. 18 Div.
- 4 *hf.* Professor PEABODY. — The Minister as Preacher, and the history of Christian preaching. *Half-course.* 9 Div.
- 5 *hf.* Asst. Professor HALE. — The Minister as Organizer and Director of Church Activities. *Half-course.* 8 Div.
- 7 <sup>3</sup>/<sub>hf.</sub> Asst. Professor HALE. — The Homiletical Use of the New Testament. *Half-course.* 1 Div.

## ELOCUTION.

- 2 *hf.* Dr. CURRY. — Vocal expression. *Half-course.* 8 Div.

## SUMMER SCHOOL OF THEOLOGY.

- President W. J. TUCKER. — Four lectures: Modern Christianity.
- Professor G. B. FOSTER. — Six lectures: The Finality of the Christian Religion.
- Professor W. W. FENN. — Six lectures: The Authority of Jesus.
- Professor G. H. PALMER. — Two lectures: A Defense of Dogma.
- Professor G. F. MOORE. — Six lectures: The Study of Religions in its bearing upon the conception of the Christian Religion and upon the practical task of the Church.
- Professor H. C. KING. — Six lectures: The Obscurity of Spiritual Truth.
- Professor G. A. COE. — Six lectures: Studies in the Psychology of Religion.
- Professor H. S. NASH. — Two lectures: (1) The Dogma of Creation in Relation to the Personal and Social Consciousness. (2) The Atonement as the Realization of Divine and Human Freedom.
- Rev. C. F. DOLE. — Two lectures: (1) The Good Will in Ethics. (2) The Good Will in Religion.
- Professor WILLIAM JAMES. — Two lectures: Intellect and Feeling in Religion.
- Professor ORELLO CONE. — Two lectures: The Significance of the Death of Jesus.
- Professor F. G. PEABODY. — One lecture: The Character of Jesus Christ.

During the year from October 1, 1901, through September 30, 1902, there were added to the Library 401 volumes and 28 pamphlets by purchase, and 1,590 volumes and 1,292 pamphlets by gift. October 1, 1902, there were in the Library 82,568 volumes and 8,307 pamphlets. During the year 1,392 titles were catalogued in the author catalogue and 344 titles in the subject catalogue. There were borrowed from the stack for home use 1,092 volumes; from the stack for hall use, 431 volumes; from the reserved books for over-night use, 1,155 volumes.

FRANCIS G. PEABODY, *Dean.*

## THE LAW SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY: —

SIR, — I have the honor of presenting my report upon the Law School for the academic year 1901–02.

The table on pages 182, 183 gives the courses of study and instruction during the year, the text-books used, the number of exercises per week in each course, and the number of students

Year.	Whole No. of Students.	Total of College Graduates.	Harvard Graduates.	Graduates of other Colleges.	Non-Graduates.	Percent of College Graduates.	No. of Colleges represented.
1870-71	165	77	27	50	88	47	27
1871-72	188	70	34	36	68	51	25
1872-73	117	66	34	32	51	56	25
1873-74	141	86	49	37	55	61	25
1874-75	144	82	63	19	62	57	18
1875-76	178	98	60	38	80	54	25
1876-77	199	116	74	42	88	58	30
1877-78	196	121	80	41	75	62	30
1878-79	169	109	71	38	60	64	24
1879-80	177	118	90	28	59	66	20
1880-81	161	112	82	30	49	70	19
1881-82	161	99	66	33	62	61	22
1882-83	138	93	58	35	45	67	32
1883-84	150	105	75	30	45	70	25
1884-85	156	122	85	37	34	78	31
1885-86	158	122	83	39	36	77	29
1886-87	188	143	88	55	45	76	34
1887-88	225	158	102	56	67	70	32
1888-89	225	158	105	53	67	70	32
1889-90	262	189	122	67	73	72	41
1890-91	285	200	135	65	85	70	33
1891-92	370	257	140	117	113	69	48
1892-93	405	266	132	134	139	66	54
1893-94	367	279	129	150	88	76	56
1894-95	413	310	139	171	103	75	74
1895-96	475	380	171	209	95	80	82
1896-97	490	408	186	222	82	83	82
1897-98	551	490	229	261	61	89	77
1898-99	564	503	212	291	61	89	78
1899-00	613	557	236	321	56	91	67
1900-01	655	605	252	353	50	92	83
1901-02	633	584	247	337	49	92	92
1902-03	643	599	241	358	44	98	94

Instructors.	Studies and Text-books.	Exercises per week.	Number of students examined.
	<b>First Year.</b>		
Prof. Williston.	Contracts. Cases on Contracts : Langdell, vol. 1 (2d ed.), Williston, vol. 3 . . .	3	244
Prof. Gray	Property. Gray's Cases on Property, vols. 1, 2 . . . . .	2	248
Asst. Prof. Westengard	Torts. Cases on Torts : Ames, vol. 1 (2d ed.), Smith, vol. 2 . . . . .	2	254
Prof. Smith	Criminal Law and Procedure. Beale's Cases on Criminal Law . . . . .	2	251
Prof. Beale. Mr. Peabody	Civil Procedure at Common Law. Ames's Cases on Pleading . . . . .	1	240
Asst. Prof. Westengard			
	<b>Second Year.</b>		
Prof. Wambaugh	Agency. Wambaugh's Cases on Agency . . . . .	2	69
Prof. Brannan	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes . . .	2	81
Prof. Wambaugh	Contracts and Quasi-Contracts. Keener's Cases on Quasi-Contracts . . . . .	2	6
Prof. Thayer. Prof. Beale	Evidence. Thayer's Cases on Evidence (2d ed.) . . . . .	2	198
Prof. Wambaugh	Insurance, Marine, Fire, and Life. Wambaugh's Cases on Insurance . . . . .	2	7
Prof. Ames	Jurisdiction and Procedure in Equity. Ames's Cases in Equity Jurisdiction . . .	2	168
Prof. Smith	Law of Persons. Smith's Cases on Persons . . . . .	1	9
Prof. Gray	Property. Gray's Cases on Property, vols. 3, 4 . . . . .	2	188
Asst. Prof. Westengard	Sales of Personal Property. Williston's Cases on Sales . . . . .	2	187
Prof. Williston	Trusts. Ames's Cases on Trusts (2d ed.) . . . . .	2	188
Prof. Ames	Admiralty. Ames's Cases on Admiralty . . . . .	1	4
Prof. Strobel	Bankruptcy. Williston's Cases on Bankruptcy . . . . .	1	6
Prof. Williston	Carriers. McClain's Cases on Carriers and Beale's Cases on Carriers . . . . .	1	19
Prof. Beale	Damages. Beale's Cases on Damages . . . . .	1	2
Prof. Brannan			



Third Year.

Prof. Thayer	Constitutional Law. Thayer's Cases on Constitutional Law . . . . .	2 & 8	125
Asst. Prof. Westengard }			
Prof. Beale	Conflict of Laws. Beale's Cases on the Conflict of Laws . . . . .	2	97
Prof. Smith	Corporations. Smith's Cases on Private Corporations (2d ed.). Smith's Cases on Municipal Corporations . . . . .	2	165
Prof. Strobel	International Law as administered by the Courts . . . . .	2	10
Prof. Ames	Jurisdiction and Procedure in Equity. Ames's Cases in Equity Jurisdiction . .	2	143
Prof. Brannan	Partnership. Ames's Cases on Partnership . . . . .	2	27
Prof. Gray	Property. Gray's Cases on Property, vols. 5, 6 . . . . .	2	69
Mr. Wyman	Suretyship and Mortgage. Ames's Cases on Suretyship . . . . .	2	48
Prof. Wambaugh	Agency. Wambaugh's Cases on Agency . . . . .	2	7
Prof. Brannan	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes . .	2	26
Prof. Wambaugh	Contracts and Quasi-Contracts. Keener's Cases on Quasi-Contracts . . . . .	2	7
Prof. Thayer. Prof. Beale	Evidence. Thayer's Cases on Evidence . . . . .	2	17
Prof. Wambaugh	Insurance, Marine, Fire, and Life. Wambaugh's Cases on Insurance . . . . .	2	22
Prof. Smith	Law of Persons. Smith's Cases on Persons . . . . .	1	15
Prof. Gray	Property II. Gray's Cases on Property, vols. 3, 4 . . . . .	2	13
Asst. Prof. Westengard }			
Prof. Williston	Sales of Personal Property. Williston's Cases on Sales . . . . .	2	29
Prof. Ames	Trusts. Ames's Cases on Trusts (2d ed.) . . . . .	2	17
Prof. Strobel	Admiralty. Ames's Cases on Admiralty . . . . .	1	9
Prof. Williston	Bankruptcy. Williston's Cases on Bankruptcy . . . . .	1	52
Prof. Beale	Carriers. McClain's Cases on Carriers and Beale's Cases on Carriers . . . . .	1	66
Prof. Brannan	Damages. Beale's Cases on Damages . . . . .	1	2
Prof. Gray	Comparative Jurisprudence . . . . .	1	6

who offered themselves for examination in each course at the end of the year.

During the twelve months from October 1, 1900, to October 1, 1901, 5,059 bound volumes and 425 pamphlets were added to the library. The library contained, October 1, 1901, about 67,500 volumes and 6,800 pamphlets.

The table on page 181 exhibits the growth of the School during the last thirty-one years, in the number of students, the number and percentage of college graduates, and in the number of colleges represented by their graduates. The figures for the current year will be slightly increased by later entries.

The number of non-graduates, 44, is somewhat misleading. Thirty-five of these are Harvard College Seniors, on leave of absence and registered in the Law School, of whom 29 have completed the work required for the degree of A.B., and 3 lack only a course. If these 35 Seniors be transferred to the College Graduate column, we have 631 graduates, and the percentage of college graduates rises from 98 to 99.

JAMES BARR AMES, *Dean.*

## THE FACULTY OF MEDICINE.

TO THE PRESIDENT OF THE UNIVERSITY :—

SIR,—As Dean of the Faculty of Medicine I have the honor to submit the following report for the academic year 1901–02.

Early in the year, at the request of the Corporation, President Eliot appointed the following members of the Faculty of Medicine as an Advisory Committee on the location and construction of the new buildings of the Medical School: Dr. J. C. Warren (Chairman), and Drs. W. L. Richardson, H. P. Bowditch, E. H. Smith, W. F. Whitney, F. C. Shattuck, C. S. Minot, H. L. Burrell, H. C. Ernst, C. Harrington, F. Pfaff, T. Smith, F. Dexter, and F. B. Mallory. Dr. Farrar Cobb was appointed Secretary.

At the first meeting of this Committee the following sub-committees were appointed :—

*Executive Committee.*—Drs. J. C. Warren, W. L. Richardson, and H. P. Bowditch.

*Committee on the Administration Building.*—Drs. W. L. Richardson, W. F. Whitney, J. C. Warren, and F. C. Shattuck.

*Committee on the Building for Anatomy, Histology, and Embryology.*—Drs. C. S. Minot and F. Dexter.

*Committee on the Building for Physiology and Physiological Chemistry.*—Drs. H. P. Bowditch and E. S. Wood.

*Committee on the Building for Pathology and Bacteriology.*—Drs. H. C. Ernst, F. B. Mallory, T. Smith, and H. L. Burrell.

*Committee on the Building for Hygiene and Pharmacology.*—Drs. C. Harrington and F. Pfaff.

In the second half of the second year and during the whole of the third year, sectional work has been substituted so far as possible for class work. The classes have been divided into sections of six, and thus the amount of individual instruction has been greatly increased, and with most satisfactory results. In many departments a practical examination has been made a part of the required final examination.

Since early in the spring of 1901 the Committee on Medical Education has been considering the advisability of making the fourth year in the Medical School elective, and in January, 1902, made a

report recommending such a change. The report was accepted and referred for consideration to the Committee on the Course of Study and the Committee on Medical Education, acting as a joint committee. After many meetings the Committee reported unanimously in favor of the plan. The report was discussed by the Faculty at the June meeting and it was voted that, beginning with the class entering the School in the fall of 1902, the fourth year be elective without any restrictions and that the total number of hours required for each student be at least one thousand.

At the close of the academic year, 166 men were recommended to the Corporation for degrees, as follows:—

Medical School . .	{ For the degree of M.D. . . . .	111
	“ “ “ <i>cum laude</i> . . . . .	23
Dental School . .	{ For the degree of D.M.D. . . . .	26
	“ “ “ <i>cum laude</i> . . . . .	6
Veterinary School . .	For the degree of M.D.V. . . . .	1
	Total . . . . .	166

In accordance with the recommendation of the Administrative Board of the Dental School the requirements for admission to the Dental School, to take effect in June, 1904, were changed so as to admit without examination candidates holding a degree in Letters, Science, or Medicine, from a recognized college or scientific school, or those who have passed an examination for admission to Harvard College or the Lawrence Scientific School, or any other reputable college of letters. The requirement for admission of all other candidates was raised to conform more nearly to the examination required for admission to Harvard College or the Lawrence Scientific School.

WILLIAM L. RICHARDSON, *Dean.*

## THE MEDICAL SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY :—

SIR, — AS Dean of the Medical School, I have the honor to submit the following report for the academic year 1901-02.

The Administrative Board for the Medical School was constituted as follows : Drs. W. L. Richardson, J. C. Warren, E. S. Wood, F. C. Shattuck, W. F. Whitney, C. M. Green, C. Harrington, F. Dexter, and F. B. Mallory.

*Building.* — The principal change made in the Medical School building was the construction of a new laboratory for the Department of Surgical Pathology. About one-third of the eastern portion of the locker room in the first story was turned into a very convenient, practical working laboratory, at an expense of somewhat less than one thousand dollars.

It was found during the early part of the summer that the various leaks in the Histological Laboratory, Museum, and various other rooms in the building were due to the fact that the mortar in the brick work and stone facings had become crumbled to such an extent as to permit water to pass through the walls in various places. It was therefore found necessary to employ masons to point up the brick walls and stone facings during the past summer. This was done in a thorough manner at an expense of one thousand dollars.

*Physiology.* — The following papers containing investigations by the Laboratory staff have been published : —

The movements of the intestines studied by means of the Röntgen rays. By Dr. W. B. CANNON. *The American Journal of Physiology*, Vol. VI, pp. 251-277.

A comparative study in the viscosity of the blood. By Dr. R. BURTON-OPITZ. *The American Journal of Physiology*, Vol. VII, pp. 243-260.

On the oxidative properties of the cell-nucleus. By Dr. RALPH S. LILLIE. *The American Journal of Physiology*, Vol. VII, pp. 412-421.

The flow of the blood in the external jugular vein. By Dr. R. BURTON-OPITZ. *The American Journal of Physiology*, Vol. VII, pp. 435-459.

On the functions of the cerebrum : I. The frontal lobes in relation to the production and retention of simple sensory-motor habits. By Dr. SHEPHERD IVORY FRANZ. [*The American Journal of Physiology*, Vol. VIII, pp. 1-22.

Maximal contraction, "staircase" contraction, refractory period, and compensatory pause, of the heart. By Dr. R. S. WOODWORTH. *The American Journal of Physiology*, Vol. VIII. This paper was begun under the direction of Professor W. T. PORTER in the Harvard Medical School and completed in the University and Bellevue Hospital Medical College.

Professor W. T. Porter has collected additional proof of the correctness of his explanation of fibrillar contraction of the heart.

Dr. W. B. Cannon has ready for the printer further investigations on the mechanics of digestion.

Dr. W. B. Cannon and Mr. H. F. Day have completed an investigation on salivary digestion in the stomach.

The following have also been published:—

An Introduction to Physiology, Part IV. Physiological Optics, pp. 1-96. By Professor W. T. PORTER. The University Press, Cambridge, 1902. This is a revised edition of Experiments for Students in the Harvard Medical School, Third Series.

Physiology at Harvard, pp. 1-66. By Professor W. T. PORTER. The University Press, Cambridge, 1902. This pamphlet is the first precise account in any university of the work done by each student in Physiology.

Animal Experimentation. By Professor H. P. BOWDITCH. Pages 65-80 of the "Series of Statements, etc.," edited by Professor H. C. ERNST. Little, Brown and Company, Boston, 1902.

Animal Experimentation. By Professor W. T. PORTER. Pages 81-105 of the "Series of Statements, etc.," edited by Professor H. C. ERNST. Little, Brown and Company, Boston, 1902.

The Harvard Physiological Apparatus devised by Professor Porter and his associates is now used to a greater or less extent in the laboratories of seventy-seven schools in the United States, three in Canada, and fifteen in Europe. Professor Porter's desire is to make the laboratory teaching of Physiology as common as the laboratory teaching of Chemistry and Physics. This may be accomplished by designing accurate apparatus that can be "manufactured" in large quantities at small cost. During the past year steady progress has been made in this direction.

The Department has established a summer course for the purpose of training teachers in the management of laboratory classes in Physiology.

*Anatomy.*—During the past year the course in Anatomy has been essentially the same as in the preceding one. Professor Dwight is of the opinion that an unexpected amount of instruction can be given by the concentration system, but how much will be retained by the student is still to be proved.

The work of the Department has been as follows : —

Professor Dwight has added considerably to the manuscript of a work on which he has been engaged for several years, and has continued his investigations as to the means of determining the sex of bones. He has published the description of two cases of the occurrence of an occasional bone in the human foot as yet undescribed. The series of anomalies of the wrist and ankle is increasing and several interesting specimens have been added to the series in the Museum.

Associate Professor Dexter has written two papers, one on the Vitalline Vein and one on the Paraphysis of the Cat, which have appeared in *The American Journal of Anatomy*.

During the year Dr. John Warren has carried on the work of studying hardened bodies and making models from the same. He showed a fine model of both the thoracic and abdominal viscera at the Annual Meeting of the Massachusetts Medical Society.

*Histology and Embryology.* — During the past year the elementary course in Histology has been entirely rearranged and considerably enlarged. The class graduating in 1901 has studied in the Histological Laboratory twenty-five organs, illustrated by thirty-five preparations, all of which were returned at the end of the course. The students who entered in 1901 examined fifty organs and eighty preparations, most of which they were at liberty to retain. The changes have been beneficial and popular.

The new admission requirements provided a small class, but one which was notably successful in its histological efforts.

The embryological collection has been increased by one hundred and sixteen new series of sections, so that it now contains over five hundred carefully graded embryos. It includes the material employed in most of the investigations already completed in this Department, and will prove of still greater value for future research. A part of the collection has been placed in metal cabinets, especially designed for the purpose. These cabinets are so far superior to all other receptacles for microscopic slides, that their general employment may be expected.

Mr. C. E. Ordway has procured from the Winchester State Hatchery a considerable number of trout, representing all stages of growth between embryos three weeks before hatching and fishes of four months. During the coming year these are to be added to the collection.

As was reported last year, the sum of five thousand dollars is needed to enlarge this collection, which is unique. A gift of this sum would be an important contribution to medical science.

The publications from those connected with this Department have been unusually numerous, and include the results of several protracted and valuable investigations. They are as follows:—

On the morphology of the pineal region based upon its development in *Acanthias*. By Professor C. S. MINOT. *American Journal of Anatomy*, Vol. I, pp. 81–98.

The distribution of vacations at American Universities. By Professor C. S. MINOT. *Science*, Vol. XV, pp. 441–444.

The relation of the American Society of Naturalists to other scientific societies. By Professor C. S. MINOT. *Science*, Vol. XV, pp. 241–244.

The problem of consciousness in its biological aspects. By Professor C. S. MINOT. *Science*, Vol. XVI, pp. 1–12. This was the president's address at the Pittsburg meeting of the American Association for the Advancement of Science.

Origin and migration of the germ-cells in *Acanthias*. By Dr. F. A. WOODS. *American Journal of Anatomy*, Vol. I, pp. 307–320.

Mental and moral heredity in royalty. By Dr. F. A. WOODS. *Popular Science Monthly*, Vol. LXI, pp. 369–378.

On the origin of the pulmonary arteries in mammals. By Dr. J. L. BREMER. *American Journal of Anatomy*, Vol. I, pp. 137–144. This paper has been reviewed by Professor Hochstetter in his *Entwicklung des Blutgefäß-systems*, 1902, p. 103.

Nuclear changes in the striated muscle cell of *Necturus*. A preliminary account. By Dr. A. C. EYCLESHYMER. *Anat. Anzeiger*, Bd. XXI, S. 379–385.

Connective tissue. By Dr. R. C. LARRABEE. *Reference Hand-book of Medical Science*, Vol. III, pp. 251–255.

The development of the vena cava inferior. By Dr. F. T. LEWIS. *American Journal of Anatomy*, Vol. I, pp. 229–244.

Professor Minot's "Laboratory text-book of Embryology" is now in process of publication. Its manner of presenting the science of embryology is new and practical. Quite confidently it may be said that the 12 mm. pig embryo, upon which a considerable section of it has been based, is now the best known embryo in existence. The book promises to occupy an important place in embryological literature.

*Bacteriology*.—The required course was given as usual to a very large class, including the dental students, and the numbers emphasized the feeling that has existed in the mind of Professor Ernst for some time that, so far as Bacteriology is concerned, the



present method of instruction is somewhat too concentrated to secure absolutely the best results.

The new fourth year elective was given for the first time and worked very satisfactorily; the essentials of the course being that each man taking it was expected to be grounded in the technique of the methods and capable of carrying on some small piece of research, upon which he should report in writing at the end of the year. Once a week all the assistants and the men electing the course were called together and the afternoon was spent in discussing the work going on and problems of interest that arose in connection with it.

Professor H. C. Ernst carried on, with the assistance of Mr. N. L. Berry, Jr., and Dr. H. P. Johnson, the study of the lesions in leprosy begun last year. He edited during the year "Animal Experimentation," Little, Brown & Co., Boston, and "Bacteriological Methods" (compiled by the assistants in the Department) for use in the required course in the School, and "The Journal of Medical Research," of which two volumes and a half have been issued in a little over a year. He also spent the summer abroad, visiting many laboratories, for possible hints in planning for the new laboratories of the Department in the School.

Langdon Frothingham, M.D.V., Austin Teaching Fellow in Bacteriology, has published "The Diagnosis of Glanders by the Strauss Method." *The Journal of Medical Research*, Vol. VI, No. 2, p. 331. "Die Diagnose des Rotzes nach der Straussschen Methode." *Zeit. f. Thiermedizin*, Bd. VI, Heft 2, 1902. "A tumor-like lesion in the lung of a horse, caused by a blastomycete (torula)." *The Journal of Medical Research*, Vol. VIII, p. 31, June, 1902.

Dr. Joseph D. Weis, Austin Teaching Fellow in Bacteriology, carried out, for the Cancer Commission, a study of "Four pathogenic torulae (blastomycetes)." *The Journal of Medical Research*, Vol. VII, p. 280, 1902.

Mr. S. B. Wolbach, Rockefeller Research Scholar, has been and is carrying on an extensive investigation upon the nature and effects of tuberculine, obtained from cultures of the bacilli from different forms of mammalian tuberculosis, in inoculation tuberculosis.

Dr. F. P. Denny has been carrying on a study of the morphology of the diphtheria, pseudo-diphtheria and xerosis bacillus, the results of which are not yet ready for publication.

Dr. W. H. Robey, Jr., finished the work begun last year with Dr. C. J. White upon "Molluscum Contagiosum." *The Journal of Medical Research*, Vol. VI, p. 255. Dr. Robey has begun a study of the agglutination reaction in the tubercle-bacillus.

Dr. George S. Whiteside carried on, but did not bring to a completion, a study of certain bacilli occurring in the male urethra.

A number of minor problems were undertaken by other gentlemen but not carried sufficiently far to be mentioned.

*Chemistry.*—There has been no change in the character of the instruction in the Chemical Department during the past year. One of the instructorships in Clinical Chemistry was made vacant by the resignation of Dr. J. B. Ogden. This vacancy was not filled, but in place of the instructorship in Clinical Chemistry an instructorship in Physiological Chemistry was established, which was filled by the appointment of Dr. Robert L. Emerson, who has taught during the past year both in Clinical and Physiological Chemistry.

During the past year Professor Wood has carried on investigations on the specific blood sera, and the biological or serum test for human blood, particularly as applied to the detection of the origin of blood stains. In connection with that subject, Dr. Wood has published the following articles:—

Medico-Legal Examination of Blood Stains. *The Boston Medical and Surgical Journal*, November 14, 1901.

The Serum Test for Blood. *The Boston Medical and Surgical Journal*, April 24, 1902.

During the past year Dr. R. L. Emerson has published in the *Journal of Medical Research* an article "Upon the occurrence of oxyphenylethylamin in pancreatic digestion," also in *Beiträge zur chemischen Physiologie und Pathologie* an article entitled "Ueber das Auftreten von Oxyphenylaethylamin bei Pankreasverdauung und über fermentative C<sub>2</sub>O<sub>2</sub>-Abspaltung." He is continuing his work on the chemistry of pancreatic digestion. He is also investigating the nature of the precipitins found in the different animal sera.

*Experimental Pharmacology and Therapeutics.*—The following represents the work done in this Department during the year:—

Ivy poisoning and its treatment. By Professor FRANZ PFAFF. *Rhodora*, Vol. IV, p. 43.

On the active principle of Jamaica Dogwood. By Dr. M. VEJUX-TYRODE. *The Journal of Medical Research*, Vol. VII, No. 4.

Composition of *Zygadenus Frumentii* and *Zygadenus Venenosus*. By Dr. M. VEJUX-TYRODE. *The Journal of Medical Research*, Vol. VI, No. 2.

The importance of milk analysis in infant feeding. By Dr. A. H. WENTWORTH. *The Boston Medical and Surgical Journal*, Vol. CXLVI, No. 26, Vol. CXLVII, No. 1.

The influence of fat upon the secretion of aceton and oxybutyric acid in human beings. By Dr. Elliot P. Joslin. He is continuing his research.

Mr. McCrudden continued his research upon "The metabolism in the different types of Arthritis in human beings."

*Pathology.* — The method of teaching adopted in 1899 has proved a great advance over previous methods. The students take greater interest in their work and acquire a thorough knowledge of the most essential parts of the subject. Some minor changes in the method of instruction have been made from year to year as they seemed advisable, but the principle of objective study, limiting the lecture to explanations of things already studied, has been steadily adhered to. Under this system very large classes can be easily handled provided there is sufficient space and material. The lack of space in the present building is greatly felt. During four months the entire laboratory is given up to teaching, leaving no desk room for research students. It does not seem advisable to have men work continuously in rooms used for the study of fresh material, owing to the danger of infection. This applies particularly to danger of infection with tuberculosis.

The Department last year undertook the investigation of the pathology of smallpox, opportunity for this being afforded by the existence of a small epidemic in the city. The chief work in the collection of material was undertaken by Dr. Magrath and carried out by him with great zeal and efficiency. For the study of certain features of the disease Drs. Brinckerhoff and Tyzzer lived for some weeks in the Smallpox Hospital on Galloupe's Island. Dr. Tyzzer, who was appointed Rockefeller Research Fellow, also worked on the experimental study and comparison of vaccinia and smallpox. The work done by the Department has materially added to the knowledge of the disease and it is expected that a full report will be made the coming year.

The changes in the Department have been as follows: Dr. J. H. Pratt was granted leave of absence during the latter half of the year and spent the time in study with Professor Krehl in Tübingen. He has resigned from Pathology and accepted a position as Assistant in the Theory and Practice of Physic. His position has been taken by Dr. H. A. Christian, a graduate of the Johns Hopkins Medical School, who has spent two years as Assistant in the Pathological Laboratory of the Boston City Hospital. Dr. Verhoeff has also resigned, and his place has been taken by Dr. W. W. Williams.

In reviewing the following work of the Department, the work in the hospital laboratories under the direction of members of the Department is included:—

On the leucocytes of the circulating blood of the rabbit. By Drs. W. R. BRINCKERHOFF and E. E. TYZZER. *The Journal of Medical Research*, 1902, Vol. VII, p. 173.

On physiological leucocytoses of the rabbit. By Drs. W. R. BRINCKERHOFF and E. E. TYZZER. *The Journal of Medical Research*, 1902, Vol. VII, pp. 191–203.

A case of acute lobar pneumonia due to the bacillus mucosus capsulatus. By Drs. W. R. BRINCKERHOFF and R. L. THOMPSON. *Boston City Hospital Medical and Surgical Reports*, 1901, Vol. XII.

A case of cholecystitis from which the bacillus mucosus capsulatus was isolated in pure culture. By Dr. H. A. CHRISTIAN. *Boston City Hospital Reports*, 1901, Vol. XII, p. 185.

Dermoid cysts and teratomata of the anterior mediastinum. By Dr. H. A. CHRISTIAN. *The Journal of Medical Research*, 1902, Vol. VII, pp. 54–71; also *Boston City Hospital Reports*, 1901, Vol. XII, pp. 114–134.

Glanders. By Professor W. T. COUNCILMAN. *Reference Handbook of the Medical Sciences*, 1902, Vol. IV.

Inflammation. By Professor W. T. COUNCILMAN. *Reference Handbook of the Medical Sciences*, 1902, Vol. IV.

A case of papillary adenocystoma of the thyroid gland. By Dr. H. C. LOW. *Boston City Hospital Medical and Surgical Reports*, 1901, Vol. XII; also *Boston Medical and Surgical Journal*, 1901, Vol. CXLV, p. 598.

Tubular Perivascular Sarcoma. By Drs. H. C. LOW and F. B. LUND. *The Journal of Medical Research*, 1902, Vol. VII.

Three gliomata of ependymal origin. By Professor F. B. MALLORY. *The Journal of Medical Research*, 1902, Vol. VIII, p. 1.

Typhoid cholecystitis with observations on gall-stone formation. By Dr. J. H. PRATT. *The American Journal of Medical Science*, 1901, Vol. CXXII, p. 584.

Goitre. By Dr. J. H. PRATT. *Reference Handbook of the Medical Sciences*, 1902, Vol. IV.

On an anatomical classification of the benign glandular tumors of the thyroid. By Dr. J. H. PRATT. *The Boston Medical and Surgical Journal*, 1902, Vol. CXLVII.

A case of glioma of the frontal lobe. By Dr. E. E. SOUTHARD. *The Boston City Hospital Medical and Surgical Reports*, 1901, Vol. XII.

Acute degenerations of the nervous system, the muscles, and the heart in diphtheria. Additional cases. By Dr. H. S. STEENSLAND. *The Boston City Hospital Medical and Surgical Reports*, 1901, Vol. XII.

Unusual complications of tabes. (1) Tabes with progressive muscular atrophy. (2) Tabes with multiple sclerosis. By Dr. E. W. TAYLOR. *The Boston Medical and Surgical Journal*, 1902, Vol. CXLVII, p. 129.

Poliomyelitis of the adult. By Dr. E. W. TAYLOR. *Journal of Nervous and Mental Diseases*, 1902, Vol. XXIX, p. 449.

A case of myeloma of the spine, with compression of the cord. By Dr. J. J. THOMAS. *The Boston Medical and Surgical Journal*, 1901, Vol. CXLV, p. 367.

A case of noma of the auricles due to the streptococcus pyogenes, and its bearing on the etiology of noma in general. By Dr. F. H. VERHOEFF. *The Boston Society of Medical Sciences*, 1901, Vol. V, p. 465.

A rapid method for differential staining of blood films and malarial parasites. By Dr. J. H. WRIGHT. *The Journal of Medical Research*, 1902, Vol. VII, p. 135.

Eine schnelle Methode zur dauernden aufbewahrung gefrorener Schnitte. By Dr. J. H. WRIGHT. *Centralbl. f. Allg. Path. u. Path. Anat.*, 1901, Bd. XII.

Degeneration of the islands of Langerhans of the pancreas in diabetes mellitus. By Drs. J. H. WRIGHT and E. P. JOSLIN. *The Journal of Medical Research*, 1901, Vol. VI, p. 360.

The following is a list of the papers which have been finished, but not yet published : —

On the erythrogenic spleen of mephitis mephitica. By Dr. W. R. BRINCKERHOFF. (For Bullard Fellowship.)

On an erythrohaemagglutinin in a cyst fluid. By Drs. W. R. BRINCKERHOFF and E. E. SOUTHARD. (For Bullard Fellowship.)

On amphophile leucogenesis in the rabbit. By Drs. W. R. BRINCKERHOFF and E. E. TYZZER. (For Rockefeller and Bullard Fellowships.)

Ependymal epithelium as a constituent of a teratoma. By Dr. H. A. CHRISTIAN.

Subphrenic abscess complicating appendicitis. By Dr. H. A. CHRISTIAN.

Secondary adenocarcinoma of the liver with report of a case in which the liver weighed 33½ lbs. By Dr. H. A. CHRISTIAN.

The appendix vermiformis at autopsy. By Dr. H. A. CHRISTIAN. Contributed for a chapter in a treatise on appendicitis by Howard A. Kelly.

The pathogenesis and pathology of enlarged prostate. By Dr. L. R. G. CRANDON.

Pylephlebitis and liver abscesses following appendicitis. By Dr. R. L. THOMPSON.

Xanthoma and lipoma xanthomatodes. By Dr. W. W. WILLIAMS.

*Comparative Pathology.* — The work of undergraduate instruction was conducted during the past year in the same manner as in the year preceding. As heretofore, only one assistant, an Austin Teaching Fellow, was associated with the professor.

In the laboratory there were at work upon various subjects, at different times during the year, five graduate students. Some of the results of the work are given as titles below; others will be published in the course of the year.

The following papers have appeared during the year: —

The relation between bovine and human tuberculosis. By Professor THEOBALD SMITH. *Proceedings New York Academy of Medicine*, 1901. *The Medical News*, February 22, 1902.

The preparation of animal vaccine. By Professor THEOBALD SMITH. *Proceedings Massachusetts Medical Society*, 1902. *Boston Medical and Surgical Journal*.

On a coccidium (*Klossiella muris*, gen. et spec. nov.) parasitic in the renal epithelium of the mouse. By Professor THEOBALD SMITH and Dr. H. P. JOHNSON. *Journal of Experimental Medicine*, 1902, Vol. VI, pp. 303-316.

A new sporozoan parasite of *Anopheles*. By Dr. H. P. JOHNSON. *Journal of Medical Research*, 1902, Vol. VII, pp. 213-219.

Experiments on the permeability of the Berkefeld filter and the Pasteur-Chamberland bougie to bacteria of small size. By Dr. W. B. WHERRY. (To appear in the *Journal of Medical Research*, in November, 1902.)

*Surgery.* — The Surgical Department has issued during the year a second report from the Croft Cancer Commission. In view of the interest which is taken at the present time in the origin of this disease, the following summary of the work done may not be out of place.

It has been the object of the investigators of the Cancer Commission during the past year to study each of the following claims of those who believe that cancer is due to a parasite, *i. e.*

(1) A proliferation of the epithelial cells analogous to the lesions seen in cancerous tumors can be produced by certain well-known protozoa (nodules caused by the coccidium oviforme).

(2) Certain skin lesions (*molluscum contagiosum*) characterized by epithelial cell proliferation are due to the action of a so-called protozoon.

(3) Blastomycetes are constantly present in human cancers and are the cause of the lesion.

(4) By experimental inoculations of animals with "blastomycetes," true epithelial or cancerous nodules can be produced.

(5) Finally, the well-known endocellular bodies seen in the protoplasm of cancer cells have a definite morphology, are "parasites," and the cause of cancer.

The subjects studied and the investigators were as follows:—

Coccidium infection of the rabbit's liver. By Dr. E. E. TYZZER.

*Molluscum contagiosum*. By Drs. C. J. WHITE and W. H. ROBEY, JR.

Culture experiments with malignant tumors. By Dr. O. RICHARDSON.

Four pathogenic torulae (*blastomycetes*). By Dr. J. D. WEIS.

The relation of *blastomycetes* to cancer. By Dr. E. H. NICHOLS.

Cell inclusions in cancer and non-cancerous tissue. By Dr. R. B. GREENOUGH.

As a result of the work pursued by these investigators under the direction of the Cancer Commission, it is concluded that:

(1) The lesion produced by the coccidium *oviforme* is essentially a process of chronic inflammation and is not analogous to the lesion seen in cancer.

(2) The lesion in *molluscum contagiosum* is characterized by certain changes in the epidermis, is not due to the action of a protozoon, and is not analogous to cancer.

(3) The so-called "*blastomycetes*" ("*saccharomycetes*") of Sanfelice and Plimmer are torulae.

(4) The lesions produced by these "*blastomycetes*" (torulae) are essentially nodules of peculiar granulation tissue, are not cancerous, nor in any sense true tumors.

(5) *Blastomycetes* are not constantly present in human cancers.

(6) The peculiar bodies seen in the protoplasm of cancer cells are not parasites, nor the cause of the lesions, but probably are, in part at least, typical stages of the process of secretion by glandular epithelium.

The Surgical Department is also affording opportunities for original investigations in selected subjects to recent graduates, and research work has been taken up as follows:—

Bacteriology of chancroid, by Drs. W. E. Faulkner and Lincoln Davis, Boston City Hospital and Massachusetts General Hospital.

Toxines of peritoneal exudates, by Dr. T. J. Manahan, Massachusetts General Hospital.

Joint fractures, by Drs. F. J. Cotton and L. T. Wilson, Boston City Hospital and Children's Hospital.

Lympho-sarcoma, by Dr. C. C. Simmons, Massachusetts General Hospital.

Patella fractures, End results, by Dr. D. D. Scannell.

Effects of X-rays on tissue, by Dr. S. W. Allen, Massachusetts General Hospital.

End results of gynaecological operations, by Dr. R. F. Wadsworth.

Chronic mastitis, by Drs. H. F. Hartwell and R. B. Greenough, Massachusetts General Hospital.

*Clinical Medicine.* — In order to bring advanced students in closer contact with disease, for some years attendance on at least three cases in dispensary districts has been required of each fourth class student, with written reports on the cases and a maximum of twenty per cent. of the final mark attached to the work. The results of this course not proving entirely satisfactory, it was determined a year ago to substitute for it two months' daily attendance on a Medical Out-Patient Department under the supervision of one of the teachers of the School. It was necessary to enlist the services of gentlemen connected with departments other than that of Clinical Medicine alone to carry out this plan. These services have been cheerfully and efficiently rendered, and the head of the Department is glad to take this opportunity of returning these gentlemen public thanks therefor. So far there is reason to be pleased with the success of the experiment which, it is hoped, may lead to a further extension of similar practical work in the future.

*Hygiene.* — Professor Harrington investigated the nature of the various proteid food preparations recommended for invalids and children, and embodied his results in a paper which is now in the hands of the printer. He also made an extensive revision of his text-book in Hygiene, published last year by Lea Brothers & Co. The second edition is now ready for issuance. Dr. Harrington prepared also the manuscript for the Department of Hygiene for the 1902 edition of "Progressive Medicine."

Dr. Lawrence J. Henderson conducted a research which demonstrated that the molecular concentration of milk is slightly below that of the blood; that the specific conductivity of milk is very much below that of the blood; and that the commonly accepted statement that tricalcium phosphate is in positive combination with caseine is probably incorrect. Dr. Henderson's paper will appear during the coming winter.



The results obtained in a series of determinations of specific conductivities by the modified wheatstone bridge-telephone method led to an investigation of the feasibility of employing the method for the rapid examination of commercial milk for added water. This is yet to be completed.

Dr. William F. Boos completed his work concerning the use of objectionable preservatives in meats and other foods, and the results thereof will form part of a paper now in preparation.

Dr. Lawrence W. Strong undertook the completion of the research on the question of toxicity of matters given off to the air from the skin, which work was begun during the preceding year by Dr. D. H. Walker and unavoidably interrupted. Dr. Strong's results disproving that the constituents of sweat are of importance in "crowd poisoning" will be published with those obtained by Dr. Walker.

*Museum.* — During the past year there have been no changes in the arrangement of the exhibition of specimens.

The series of specimens described in Professor Dwight's "Monograph on numerical variations of the human spine," have been arranged and new labels added by him.

Although a number of specimens have been received during the past year, they have been stored rather than exhibited owing to the crowded condition of the shelves. The final review of the index catalogue has been completed.

There has been a marked increase in the number of people from outside who have used or visited the Museum.

The Scholarships and Fellowships were awarded as follows: —

Barringer Scholarship, No. 1,	W. L. Barnes, A.B.,	2d Class.
Isaac Sweetser Scholarship,	C. L. Overlander, Ph.B.,	1st "
Claudius M. Jones "	W. L. Sargent, A.B.,	3d "
Hilton "	L. G. Beeley, A.B.,	2d "
" "	C. H. Staples, A.B.,	2d "
Barringer " No. 2,	G. T. Spicer, A.B.,	3d "
Alfred Hosmer Linder Scholarship,	H. W. Goodall, A.B.,	4th "
Eveleth "	E. L. Hunt,	4th "
" "	S. V. R. Hooker, A.B.,	4th "
" "	A. S. Murphy,	4th "
Edward Wigglesworth "	W. L. Hearn,	4th "
Charles B. Porter "	J. Stanton, Ph.G.,	3d "
Faculty "	R. J. Graves, S.B.,	3d "
" "	C. S. Oakman, A.B.,	3d "
" "	F. H. Albee, A.B.,	3d "
" "	L. Arkin, S.B.,	2d "
John Thomson Taylor "	N. H. Clark, S.B.,	2d "
Lucius F. Billings "	W. G. Lee, A.B.,	2d "
Orlando W. Doe "	L. S. Beals, A.B.,	2d "
Charles Pratt Strong "	J. L. Bridge, S.B.,	3d "
David Williams Cheever "	D. Robinson, A.B.,	1st "
Lewis and Harriet Hayden "	T. H. Thomas, A.B.,	3d "
Cotting Gift,	D. B. Reardon,	3d "

The George Cheyne Shattuck Fellowship was awarded W. R. Brinckerhoff, A.B., M.D., for a research on experimental leucocytosis in the rabbit.

The Charles Eliot Ware Fellowship was awarded L. W. Strong, A.B., M.D., for a research on the nature of the toxic principles of respired air.

The John Ware Fellowship was awarded E. E. Southard, A.B., M.D., for a research on gliomata.

No essay was submitted for the William H. Thorndike prize.

The Boylston Medical prize was awarded R. L. Randolph, M.D., of Baltimore, for an essay entitled "The toxins in inflammation of the eye."

The Corporation appointed the following Committee for the administration of the Boylston Medical prizes: Dr. W. F. Whitney (Chairman), and Drs. H. C. Ernst, F. Pfaff, T. Smith, W. T. Porter, F. Dexter, and E. H. Nichols.

The statistics of the School will be found in the following tables:—

### COURSES OF INSTRUCTION, 1901-02.

FIRST YEAR.	Students examined.
Anatomy. — Professor T. DWIGHT, Associate Professor DEXTER, Demonstrator WARREN, Assistant YOUNG, Assistant WHITESIDE, Assistant MOSHER, Assistant DAVIS, Assistant ALLEN, Assistant BUTLER, Assistant MARCY, Assistant STETSON.	89
Physiology. — Professor H. P. BOWDITCH, Associate Professor W. T. PORTER, Instructor CANNON, Assistant LILLIE, Assistant BURTON-OPITZ.	81
Histology and Embryology. — Professor MINOT, Instructor WOODS, Assistant DONOGHUE, Assistant LARRABEE, Assistant EMERSON, Assistant BREMER, Austin Teaching Fellow LEWIS.	78
Physiological Chemistry. — Associate Professor HILLS, Assistant CONNOLLY, Assistant LADD, Assistant MUSGRAVE.	76
SECOND YEAR.	
Bacteriology. — Professor ERNST, Assistant DENNY, Assistant PAGE, Assistant PERRY, Assistant ROBey, Assistant EVERETT, Assistant SANBORN, Austin Teaching Fellow WEIS, Austin Teaching Fellow FROTHINGHAM.	154
Advanced Anatomy. — Professor T. DWIGHT, Associate Professor DEXTER.	167
Pathology and Pathological Anatomy. — Professor COUNCILMAN, Associate Professor MALLORY, Instructor TAYLOR, Instructor WRIGHT, Instructor PRATT, Demonstrator NICHOLS, Assistant MAGRATH, Assistant VERHOEFF, Assistant WILLIAMS.	160

- Clinical Chemistry. — Professor WOOD, Instructor EMERSON, Assistant CONNOLLY, Assistant LANE, Assistant TILESTON, Assistant BAILEY. 151
- Therapeutics. — Asst. Professor PFAFF, Assistant JORDAN, Assistant VEJUX-TYRODE. 176
- Theory and Practice. — Instructor CUTLER, Assistant STONE, Assistant JOSLIN, Assistant WHITE, Assistant BADGER.
- Clinical Medicine. — Asst. Professor SEARS, Instructor VICKERY, Assistant BARTOL, Assistant PRESCOTT, Assistant J. M. JACKSON, Assistant AMES, Assistant CABOT.
- Surgery. — Asst. Professor BURRELL, Instructor C. A. PORTER, Demonstrator NICHOLS, Assistant LOTHROP.

## THIRD YEAR.

- Theory and Practice of Medicine. — Professor FITZ, Instructor CUTLER, Assistant STONE, Assistant JOSLIN, Assistant WHITE, Assistant BADGER. 121
- Obstetrics. — Professor W. L. RICHARDSON, Asst. Professor C. M. GREEN, Instructor REYNOLDS, Assistant HIGGINS, Assistant NEWELL, Assistant SWAIN, Assistant FRIEDMAN. 122
- Clinical Obstetrics. — Professor W. L. RICHARDSON, Asst. Professor C. M. GREEN, Instructor HIGGINS, Assistant NEWELL, Assistant SWAIN, Assistant FRIEDMAN.
- Dermatology. — Professor WHITE. 123
- Diseases of the Nervous System. — Professor PUTNAM, Assistant WATERMAN. 123
- Diseases of Children. — Professor ROTCH, Instructor BUCKINGHAM, Assistant CRAIGIN, Instructor MCCOLLOM, Instructor MORSE, Assistant LADD. 123
- Psychiatry. — Instructor COWLES. 127
- Gynaecology. — Asst. Professor DAVENPORT, Instructor HAVEN, Assistant STORER, Assistant HIGGINS. 123
- Surgery and Clinical Surgery. — Professor WARREN, Professor C. B. PORTER, Asst. Professor BURRELL, Asst. Professor M. H. RICHARDSON, Lecturer WATSON, Lecturer HOMANS, Instructor C. A. PORTER, Lecturer GAY, Instructor THORNDIKE, Assistant LOTHROP, Instructor MUNRO, Instructor NICHOLS, Assistant GREENOUGH. 131
- Clinical Medicine. — Professor SHATTUCK, Asst. Professor SEARS, Instructor WITHINGTON, Instructor VICKERY, Instructor JACKSON, Assistant BARTOL, Assistant AMES.

## FOURTH YEAR.

- Clinical Surgery. — Professor C. B. PORTER, Asst. Professor BURRELL, Asst. Professor M. H. RICHARDSON, Instructor MONES, Lecturer BEACH, Lecturer ELLIOT, Assistant MIXTER, Assistant J. B. BLAKE, Assistant LUND, Assistant BALCH, Assistant SCUDDER, Assistant MUMFORD, Assistant COBB, Assistant CABOT, Assistant MANAHAN, Assistant BOTTOMLEY, Assistant BREWSTER, Assistant CODMAN. 129

Clinical Medicine.—Professor SHATTUCK, Asst. Professor SEARS, Instructor McCOLLOM, Assistant R. C. CABOT, Instructor WITHINGTON, Instructor JACKSON.	137
Ophthalmology.—Professor WADSWORTH, Instructor STANDISH, Assistant JACK, Assistant GREENWOOD, Assistant QUACKENBOSS.	139
Otology.—Professor BLAKE, Professor J. O. GREEN, Assistant HAMMOND.	134
Laryngology.—Instructor DEBLOIS, Instructor FARLOW, Instructor COOLIDGE.	137
Legal Medicine.—Professor DRAPER, Instructor E. W. DWIGHT.	134
Syphilis.—Instructor POST.	136
Orthopedics.—Asst. Professor BRADFORD.	99
Hygiene.—Asst. Professor HARRINGTON, Assistant STRONG.	141
Psychiatry.—Instructor COWLES, Instructor LANE.	
Ovarian Tumors.—Lecturer HOMANS.	
Genito-Urinary Surgery.—Lecturer WATSON, Instructor THORNDIKE.	
Municipal Sanitation.—Lecturer DURGIN.	
<i>Fourth Year Electives.</i>	
Ophthalmology.—Professor WADSWORTH.	6
Otology.—Professor BLAKE, Professor J. O. GREEN, Assistant HAMMOND, Assistant CROCKETT.	1
Dermatology.—Instructor BOWEN, Assistant C. J. WHITE.	68
Diseases of the Nervous System.—Professor PUTNAM, Instructor WALTON, Instructor KNAPP.	9
Gynaecology.—Asst. Professor C. M. GREEN.	15
Operative Obstetrics.—Asst. Professor C. M. GREEN, Instructor HIGGINS, Assistant NEWELL, Assistant SWAIN, Assistant FRIEDMAN.	98
Operative Surgery.—Professor C. B. PORTER, Assistant MIXTER, Instructor MUNRO, Instructor MONKS, Assistant BALCH, Assistant SCODDER, Assistant MUMFORD, Assistant BLAKE, Assistant LUND, Instructor C. A. PORTER, Assistant BREWSTER, Assistant COBB, Assistant CABOT, Assistant LOTHROP, Assistant BOTTOMLEY, Assistant CODMAN.	81
Bacteriology.—Professor ERNST, Assistant DENNY, Assistant PERRY, Assistant PAGE, Assistant ROBEY.	5
Orthopedics.—Asst. Professor BRADFORD.	38
Clinical Microscopy.—Curator WHITNEY.	8
Clinical Chemistry.—Professor WOOD, Instructor HEWES, Assistant CONNOLLY.	3
Anatomy.—Demonstrator WARREN.	14
Embryology.—Professor MINOT, Instructor WOODS.	2
Histology of the Nervous System.—Professor MINOT, Assistant BREMER, Austin Teaching Fellow LEWIS.	1
Physiological Chemistry.—Asst. Professor PFAFF.	3
Comparative Etiology of Infectious Diseases.—Professor SMITH.	2
Hygiene.—Asst. Professor HARRINGTON, Assistant STRONG.	5

TABLE I.—GENERAL STATISTICS OF THE SCHOOL.

New matriculants . . . 67 { Graduates in Medicine . . . . . 0  
 { Undergraduates . . . . . 67

The whole number of students in attendance :—

In courses for graduates . . . . . 25  
 Fourth Class . . . . . 115  
 Third Class . . . . . 113  
 Second Class . . . . . 181  
 First Class . . . . . 87  
 Total . . . . . 521

Applicants for Degree . . . . . 142  
 Rejected . . . . . 9  
 Graduated . . . . . 133

Of the 133 students who received the degree of Doctor of Medicine, 22 received the degree *sum laude*.

	SUMMER COURSES.					GRADUATE COURSES.				
	1898.	1899.	1900.	1901.	1902.	1897-98.	1898-99.	1899-00.	1900-01.	1901-02.
Courses taken .	118	142	167	151	148	114	124	63	40	30
Students . . . .	107	116	149	126	130	60	50	46	29	25
Receipts . . . .	\$3360	\$3896	\$4696	\$4275	\$4400	\$3780	\$2861.25	\$1465	\$1065	\$700

TABLE II.—FINAL EXAMINATIONS.

	FIRST CLASS.					SECOND CLASS.								
	Histology.	Bacteriology.	Physiology.	Chemistry.		Anatomy.	Physiology.	Chemistry.	Path. Anatomy.		Adv. Anatomy.	Therapeutics.		Bacteriology.
				\$	%				\$	%		\$	%	
1898	Passed	117	119	121	120	107	120	111	99	105	111	99	111	
	Rejected	9	24	40	25	24	16	16	35	18	26	41	57	
	Total	126	143	161	144	136	136	136	134	140	137	147	108	
1899	Passed	118	117	117	115	109	112	106	105	106	105	83	83	
	Rejected	22	28	43	27	39	25	7	20	18	14	18	38	
	Total	140	145	160	154	148	137	120	123	124	123	101	101	
1900	Passed	146	129	113	116	116	133	148	110	109	109	62	36	
	Rejected	14	18	12	9	35	23	15	10	5	3	52	22	
	Total	160	147	125	125	151	148	148	124	114	112	161	84	
1901	Passed	141	147	143	136	129	123	123	88	88	89	89	95	
	Rejected	24	31	26	15	52	30	12	7	6	52	37	40	
	Total	165	178	169	151	181	159	135	95	94	141	141	135	
1905	Passed	71	64	71	68	68	143	140	140	140	108	88	38	
	Rejected	7	12	15	20	15	16	15	11	27	16	27	19	
	Total	78	76	86	88	83	159	155	155	151	124	115	57	

TABLE II. -- FINAL EXAMINATIONS, CONTINUED.

	THIRD CLASS.										FOURTH CLASS.									
	Theory and Practice.	Surgery.	Obstetrics.	Diseases of Children.	Dermatology.	Gynaecology.	Nervous Diseases.	Psychiatry.	Clinical Medicine.	Clinical Surgery.	Ophthalmology.	Otology.	Laryngology.	Legal Medicine.	Syphilia.	Orthopedics.	Hygiene.			
1898																				
Passed	126	126	118	164	115	121	124	128	122	130	115	132	122	134	139	137	120			
Rejected	10	9	18	25	19	10	7	4	14	5	19	2	15	4	2	0	10			
Total	136	137	136	179	143	131	131	132	136	135	134	134	137	138	141	137	130			
1899																				
Passed	118	119	110	98	116	118	118	106	117	119	104	120	126	122	122	100	90			
Rejected	8	8	21	49	21	7	9	14	16	7	20	2	0	0	1	0	29			
Total	126	127	131	142	137	125	127	120	133	126	124	122	126	122	123	100	119			
1900																				
Passed	118	116	116	129	114	120	119	115	115	117	110	112	114	119	121	83	113			
Rejected	7	5	12	10	13	0	7	8	9	2	16	1	5	0	1	0	13			
Total	125	121	128	139	127	120	126	123	124	119	126	113	119	119	122	83	126			
1901																				
Passed	132	125	129	186	109	128	125	129	111	120	108	114	117	121	120	71	116			
Rejected	8	5	9	2	30	7	12	9	10	2	10	0	0	0	0	0	9			
Total	140	131	138	188	139	135	137	138	121	122	118	114	117	121	120	71	125			
1902																				
Passed	111	110	111	120	112	117	116	116	131	129	121	131	127	122	126	98	124			
Rejected	10	5	11	8	19	6	7	11	6	0	12	2	0	2	1	1	12			
Total	121	115	122	128	132	123	123	127	137	129	133	124	127	124	127	99	141			

TABLE II.—FINAL EXAMINATIONS.

	FIRST CLASS.						SECOND CLASS.								
	Histology.		Bacteriology.		Physiology.		Chemistry.		Anatomy.		Physiology.		Chemistry.		
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	
1898 {	Passed	129	117	119	121	120	120	107	99	111	107	99	111	107	99
	Rejected	13	27	24	40	16	16	12	35	26	50	35	41	50	35
	Total	142	144	143	161	144	136	136	137	134	157	134	152	157	134
1899 {	Passed	124	118	117	117	115	118	6	106	14	109	106	88	109	106
	Rejected	22	27	18	43	25	7	28	20	18	28	20	18	28	20
	Total	146	145	145	160	144	120	123	122	132	137	126	106	137	126
1900 {	Passed	146	129	118	118	116	133	148	110	109	148	110	109	148	110
	Rejected	14	18	12	12	9	15	10	32	22	5	32	22	5	32
	Total	160	147	130	130	125	148	163	142	131	153	143	131	153	143
1901 {	Passed	141	147	143	143	136	123	123	88	89	123	88	89	123	88
	Rejected	24	31	17	26	16	12	9	52	37	7	52	37	7	52
	Total	166	178	160	169	152	135	132	140	126	130	140	126	130	140
1902 {	Passed	71	64	71	71	68	128	143	140	16	143	140	16	143	140
	Rejected	7	12	16	18	18	28	15	27	16	17	27	16	17	27
	Total	78	76	87	89	86	156	158	166	32	160	167	32	160	167



TABLE II. — FINAL EXAMINATIONS, CONTINUED.

	THIRD CLASS.										FOURTH CLASS.									
	Theory and Practice.	Surgery.	Obstetrics.	Diseases of Children.	Dermatology.	Gynaecology.	Nervous Diseases.	Psychiatry.	Chemical Medicine.	Clinical Surgery.	Ophthalmology.	Oology.	Laryngology.	Legal Medicine.	Syphilis.	Orthopedics.	Hygiene.			
1898																				
Passed	128	128	118	154	115	131	194	128	128	130	115	132	123	134	139	127	130			
Rejected	10	9	18	25	19	10	7	4	14	8	19	2	18	4	2	0	15			
Total	138	137	136	179	143	131	131	132	136	138	134	134	137	138	141	127	143			
1899																				
Passed	118	119	110	93	116	118	118	106	117	119	104	120	129	123	123	100	90			
Rejected	8	8	21	49	21	7	9	14	16	7	20	2	0	0	1	0	38			
Total	126	127	131	143	137	125	127	120	133	126	124	122	129	123	124	100	128			
1900																				
Passed	118	116	116	129	114	120	119	115	115	117	110	115	114	119	121	83	113			
Rejected	7	4	12	10	13	0	7	6	9	2	16	1	5	0	1	0	13			
Total	125	121	128	139	127	120	126	121	124	119	126	116	119	119	122	83	126			
1901																				
Passed	132	126	129	136	109	128	125	129	111	120	108	114	117	121	120	71	116			
Rejected	8	5	9	2	20	7	12	9	10	2	10	0	0	0	0	0	12			
Total	140	131	138	138	129	135	137	138	121	122	118	114	117	121	120	71	128			
1902																				
Passed	111	110	111	120	118	117	116	116	131	129	121	131	137	133	135	98	124			
Rejected	10	8	11	3	19	6	7	8	6	0	18	3	0	2	1	1	17			
Total	121	118	122	123	137	123	123	124	137	129	139	134	137	135	136	99	141			

TABLE II.—FINAL EXAMINATIONS.

	FIRST CLASS.										SECOND CLASS.											
	Histology.		Bacteriology.		Physiology.		Chemistry.		Anatomy.		Physiology.		Clinical Chemistry.		Path. Anatomy.		Adv. Anatomy.		Therapeutics.		Bacteriology.	
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
1898	Passed	129	117	119	121	120	120	120	120	107	99	107	120	120	107	99	107	111	111	111		
	Rejected	13	27	18	40	24	16	16	16	50	30	50	16	16	50	30	50	41	41	41		
	Total	142	144	143	161	144	136	136	136	157	134	157	136	136	157	134	157	152	152	152		
1899	Passed	124	118	117	117	115	115	115	115	109	105	109	115	115	109	105	109	105	105	105		
	Rejected	23	37	18	43	37	25	25	25	28	20	28	25	25	28	20	28	18	18	18		
	Total	146	145	145	160	154	140	140	140	137	123	137	140	140	137	123	137	123	123	123		
1900	Passed	146	129	129	113	116	116	116	116	148	110	148	116	116	148	110	148	110	110	110		
	Rejected	14	18	12	12	9	23	23	23	6	3	6	23	23	6	3	6	23	23	23		
	Total	160	147	147	125	125	145	145	145	154	113	154	145	145	154	113	154	113	113	113		
1901	Passed	141	147	143	143	136	136	136	136	152	125	152	136	136	152	125	152	125	125	125		
	Rejected	24	31	17	26	15	30	30	30	7	5	7	30	30	7	5	7	30	30	30		
	Total	165	178	178	169	178	178	178	178	169	130	169	178	178	169	130	169	169	169	169		
1902	Passed	71	64	64	71	68	68	68	68	143	111	143	68	68	143	111	143	108	108	108		
	Rejected	7	12	16	18	20	16	16	16	23	17	23	16	16	23	17	23	16	16	16		
	Total	78	76	76	89	89	81	81	81	89	89	81	81	81	89	89	81	81	81	81		

TABLE II. — FINAL EXAMINATIONS, CONTINUED.

	THIRD CLASS.										FOURTH CLASS.									
	Theory and Practice.	Surgery.	Obstetrics.	Diseases of Children.	Dermatology.	Gynaecology.	Nervous Diseases.	Psychiatry.	Clinical Medicine.	Clinical Surgery.	Ophthalmology.	Otology.	Laryngology.	Legal Medicine.	Syphilis.	Orthopedics.	Hygiene.			
1898																				
Passed	126	128	118	154	115	121	128	128	122	130	115	132	122	134	130	127	120			
Rejected	10	9	13	25	19	10	4	4	14	8	19	14	10	4	2	0	10			
Total	136	137	136	179	143	131	132	132	136	135	134	134	137	138	141	127	133			
1899																				
Passed	118	119	110	93	116	118	105	105	117	119	104	120	120	123	123	100	90			
Rejected	8	8	21	49	21	7	9	14	16	7	20	2	0	0	1	0	33			
Total	126	127	131	142	137	125	124	123	133	126	124	122	120	123	124	100	123			
1900																				
Passed	118	116	116	129	114	120	115	115	115	117	110	115	114	119	121	83	112			
Rejected	7	4	12	10	13	0	7	6	9	2	16	1	5	0	1	0	13			
Total	125	121	128	139	127	120	122	123	124	119	126	116	119	119	122	83	125			
1901																				
Passed	132	126	129	125	109	123	129	129	111	120	108	114	117	121	120	71	116			
Rejected	6	5	9	2	23	7	0	0	10	2	10	0	0	0	0	0	12			
Total	140	131	138	127	132	130	129	129	121	122	118	114	117	121	120	71	128			
1902																				
Passed	111	110	111	120	113	117	116	116	131	129	121	131	127	123	125	96	124			
Rejected	10	5	11	3	19	6	7	8	6	0	13	2	0	2	1	1	17			
Total	121	115	122	123	132	123	123	127	137	129	134	133	127	125	126	97	141			

TABLE II. — FINAL EXAMINATIONS, CONTINUED.

		FOURTH CLASS. — ELEVENTH.																																		
		Ophthalmology.		Oology.		Gynaecology.		Dermatology.		Diseases of Nervous System.		Operative Obstetrics.		Operative Surgery.		Bacteriology.		Orthopedics.		Clinical Microscopy.		Clinical Chemistry.		Anatomy.		Physiology.		Hygiene.		Physiology of Chemistry.		Comparative Pathology of Infectious Diseases.		Histology of the Nervous System.		
		Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected			
1898	Passed	5	0	1	0	19	3	45	9	15	71	70	24	10	4	17	11	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Rejected	0	0	0	0	3	14	16	10	3	10	1	3	11	0	2	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Total	5	0	1	0	22	17	61	19	18	81	71	27	21	4	19	22	11	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1899	Passed	6	7	16	0	6	6	57	8	9	38	38	18	25	4	7	10	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Rejected	1	14	0	0	1	6	6	5	5	3	6	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Total	7	21	16	0	7	12	63	13	14	41	44	20	26	4	7	10	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1900	Passed	3	4	11	0	0	0	54	5	5	50	51	6	40	5	4	12	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Rejected	0	0	0	0	0	0	3	5	1	0	1	3	0	0	0	2	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	3	4	11	0	0	0	57	10	6	50	52	9	40	5	4	14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1901	Passed	3	3	33	0	4	11	33	4	13	56	71	10	50	10	3	20	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Rejected	0	0	0	0	0	0	4	11	2	1	3	2	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	3	3	33	0	4	11	37	15	15	57	74	12	67	10	3	20	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1902	Passed	6	1	14	0	7	4	64	6	7	57	70	6	37	7	3	14	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Rejected	0	0	1	0	4	6	4	2	2	11	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	6	0	15	0	11	10	68	8	9	68	72	6	38	8	3	14	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

As had been anticipated, the number of new matriculants (67) was the smallest for many years. The requirement of a degree as a prerequisite for admission caused a great falling off in number, but a marked change for the better in the qualification of the matriculants. Of the class which entered the previous year (numbering 196), thirty-three dropped out during the first year, and twenty were again classified as first year students at the beginning of their second year; while of the sixty-seven who entered last fall, only four failed to complete the year, and only six were again classified as first year students.

WILLIAM L. RICHARDSON, *Dean.*

## THE DENTAL SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY: —

SIR, — As Dean of the Dental School I herewith submit the following report for the academic year 1901–02.

The number of students enrolled was 105, divided as follows: —

Third-year students . . . . .	35
Second-year students . . . . .	32
First-year students . . . . .	35
Post-graduates . . . . .	3
	105

There were forty candidates for the degree, eight of whom failed in final examinations, leaving a graduating class of thirty-two, six of whom received the degree *cum laude*.

The courses of instruction were as follows: —

- Anatomy.** — Professor T. DWIGHT, Associate Professor DEXTER, Demonstrator WARREN, Assistants ALLEN, MOSHER, YOUNG, BUTLER, MARCY, WHITESIDE, DAVIS, STETSON. 392 hours.
- Physiology.** — Professor H. P. BOWDITCH, Associate Professor W. T. PORTER, Instructor LILLIE. 340 hours.
- Histology and Embryology.** — Professor MINOT, Assistants DONOGHUE, LARRABEE, WOODS, BREMER, Austin Teaching Fellow LEWIS. 311 hours.
- Chemistry.** — Professor HILLS, Assistant SMITH. 190 hours.
- Bacteriology.** — Professor ERNST, Assistants PAGE, DENNY, ROBAY, PERRY. 160 hours.
- Materia Medica and Therapeutics.** — Professor BRIGGS, 32 lectures; Assistant RODGERS, 32 recitations.
- Dental Pathology.** — Professor BRACKETT. 32 lectures.
- Neurology.** — Instructor E. W. TAYLOR. 4 lectures.
- Crown and Bridge Work and Metallurgy.** — Assistant Professor COOKE. 32 lectures.
- Surgical Pathology and Surgery.** — Professor WARREN, Instructor MONKS. 18 lectures.
- Mechanical Dentistry and Orthodontia.** — Professor SMITH. 32 lectures.
- Orthodontia.** — Professor SMITH, 32 clinics; Assistant BAKER, 64 hours.
- Mechanical Dentistry.** — Clinical Instructor J. D. DICKINSON. 8 clinical lectures.
- Mechanical Dentistry.** — Clinical Lecturer STODDARD. 16 lectures and demonstrations.
- Mechanical Dentistry, laboratory, Juniors.** — Demonstrator CROSS, Assistant Demonstrator CHASE. 544 hours.

- Mechanical Dentistry, laboratory, Seniors. — Demonstrator CROSS, Instructors HAYDEN, ELDBRED, BURNHAM, GRANT, CHUTE. 496 hours.
- Practical Dentistry. — Instructor UPHAM. 14 lectures.
- Operative Dentistry and Dental Jurisprudence. — Clinical Lecturer CLAPP, 12 lectures; Instructor STARRATT, clinical assistant.
- Operative Dentistry and Oral Surgery. — Professor FILLEBROWN, 32 lectures; Assistant BALDWIN.
- Operative Dentistry. — Assistant Professor POTTER. 32 lectures.
- Operative Dentistry. — Clinical Instructor WERNER. 13 lectures and demonstrations.
- Operative Dentistry, infirmary, Juniors. — Assistant Demonstrator D. W. DICKINSON, Instructor FARRINGTON. 448 hours.
- Operative Dentistry, infirmary, Seniors. — Demonstrator McMEEKIN, Instructors PAUL, EDDY, BLAISDELL, PERKINS, TAFT, GRAY, HARDING, HOLMES, BRADLEY. 624 hours.
- Mechanical Treatment of Fractured Jaws, Cleft Palates, and other Deformities. — Demonstrator CROSS. 15 lectures.
- Extracting and Anaesthesia (Demonstrations). — Instructors HART, SQUAREBRIGS. 160 afternoons.

The following tables show the work done in the infirmary and laboratory during the year: —

## OPERATIVE DEPARTMENT.

## Surgical clinics by Professor FILLEBROWN.

Necrosis . . . . .	Number of cases	11
Abscess . . . . .	“ “	11
Antrum disease . . . . .	“ “	3
Tumor . . . . .	“ “	3
Epulis . . . . .	“ “	1
Hare lip . . . . .	“ “	4
Cleft palate . . . . .	“ “	3
Excision of inferior dental nerve . . . . .	“ “	1
Ulcer . . . . .	“ “	1
Dental Cyst . . . . .	“ “	1

## INFIRMARY.

No. of patients treated . . . . .	7,789
“ “ “ for diseases of teeth and gums . . . . .	2,809
“ sets of teeth cleaned . . . . .	1,497
“ operations . . . . .	19,981
“ fillings — gold . . . . .	3,236
“ “ amalgam . . . . .	2,063
“ “ cement . . . . .	1,718
“ “ gutta percha . . . . .	3,680
“ “ porcelain inlays . . . . .	10

## MECHANICAL DEPARTMENT.

## SERVICE TO PATIENTS.

No. of sets of artificial teeth . . . . .	273
“ “ “ “ repaired . . . . .	121
“ cases of fractured jaws . . . . .	46
“ appliances for fractured jaws . . . . .	52
“ cleft palate appliances . . . . .	9
“ splints for cleft palate operations . . . . .	4
“ obturators and appliances for cleft palates . . . . .	11
“ appliances for nose . . . . .	1

## PRACTICE WORK.

No. of sets of artificial teeth . . . . .	142
“ splints for fractured jaws . . . . .	18
“ vulcanite plates . . . . .	233
“ “ “ repaired . . . . .	18
“ angle appliances . . . . .	3

## Under the direction of Professor SMITH : —

No. of cases of irregularity treated and corrected . . . . .	93
“ appliances . . . . .	174
“ articulated models of regulating cases . . . . .	132
“ orthodontia appliances, practice work . . . . .	181

## Under the direction of Asst. Professor COOKE and Dr. ELDRÉD : —

## SERVICE TO PATIENTS.

No. of crowns and caps . . . . .	152
“ “ “ repaired . . . . .	15
“ pieces of bridge work . . . . .	27
“ “ “ repaired . . . . .	7
“ porcelain inlays . . . . .	31
“ “ tips . . . . .	1

## PRACTICE WORK.

No. of crowns and caps . . . . .	420
“ bridges . . . . .	180
“ porcelain tips . . . . .	29
“ “ inlays . . . . .	55
“ carved teeth models . . . . .	29

The summer service at the Infirmary was much better than in previous vacation seasons. The Infirmary was open daily, except Sundays, and 395 patients were treated for various troubles relating



to the teeth and mouth. Of the cases treated thirteen were cases of fractured jaws. The Emergency Corps was in constant attendance and responded to many calls for the treatment of persons suffering with dental troubles in homes and in hospitals.

Dr. Cross was appointed Demonstrator of Mechanical Dentistry and has devoted his entire time to the School. Heretofore two demonstrators have shared this work, one taking charge in the morning and the other in the afternoon. This change has proved so beneficial to the students and the patients that it is to be hoped that the School can soon afford to extend the system to the Operative Department.

Sixty-six new books were added to the library during the year, making a total of 595 volumes in circulation.

To the Museum have been added six pathological specimens, eight mechanical specimens, and a variety of animal skulls that are not yet classified.

Dr. Potter presented to the School a valuable collection consisting of ten mounted photographs representing sections through the teeth and the superior maxilla.

The action taken by the Administrative Board which provides for higher entrance examinations is an important step towards raising the entrance requirements to the same standard as that for entrance to Harvard College and the Lawrence Scientific School. The act provides that in June, 1904, and thereafter, candidates for admission to the Dental School holding a degree in letters, science, or medicine from a recognized college or scientific school, or who have passed the examinations for admission to Harvard College or any other reputable college of letters, or the Lawrence Scientific School, are admitted without examination. All other candidates must offer, from the following list, studies amounting to 16 points. Sections 1, 2, 3, 4 are required. Electives may be chosen from Section 5. The figure attached to each study indicates the relative weight (termed points) which may be given to it in determining the question of the candidate's fitness for admission.

1. English (4)
2. Physics (2)
3. Latin (4) or French (2) and English and American History (2)  
or French (2) and Greek and Roman History (2)  
or German (2) and English and American History (2)  
or German (2) and Greek and Roman History (2)
4. Theoretical and Descriptive (Inorganic) Chemistry and Qualitative Analysis (4)

In addition he will be obliged to offer either : —

5. Algebra (2)  
Plane Geometry (2)

Or any two of the following : —

- Solid Geometry (1); Botany (1); Zoölogy (1)  
Anatomy, Physiology, and Hygiene (1); Wood-working (1)  
Blacksmithing (1); Chipping, Filing, and Fitting (1)  
Machine-tool Work (1)

The following papers were read during the year by members of the teaching staff, and were subsequently published : —

Physiological results of operation for cleft palate. By Professor FILLEBROWN.

A hare-lip incision. By Professor FILLEBROWN.

A contribution to operative orthodontia. By Professor SMITH.

Porcelain inlays. By Professor BRIGGS.

The ethics and prosthetics of crown and bridge work. By Professor COOKE.

Foreign observations. By Dr. BRADLEY.

Some things I have found useful in practice. By Dr. STODDARD.

Which shall it be, M.D. or A.B.? By Dr. GRANT.

Winning the confidence of children. By Dr. WENTWORTH.

EUGENE H. SMITH, *Dean.*

## THE BUSSEY INSTITUTION.

TO THE PRESIDENT OF THE UNIVERSITY: —

SIR, — I respectfully submit the following report on the School of Agriculture and Horticulture, known as the Bussey Institution, for the year 1901–02.

The improvement noted in previous reports as to the number and quality of students seeking the professional instruction which the School has to give was well maintained. Thirty-five students were in attendance, and the degree of Bachelor of Agricultural Science was conferred upon five candidates at Commencement.

Instruction was given as usual in Agriculture, Horticulture, Agricultural Natural History, Agricultural Chemistry, and Chemical Analysis, and in Cattle Breeding, Cattle Feeding, and Dairying. In addition to these standard classes a new course in "Mathematics and Surveying" was given at the Bussey Institution to students of the second year, by Mr. H. H. Fox. This course occupied three afternoons a week throughout the school year. It was highly esteemed by the students and was most satisfactory in every way. Thanks to the courtesy of Professor Hollis, the instruments and appliances necessary for conducting the course were lent to the Bussey Institution by the Department of Engineering at Cambridge.

One Bulletin of the Bussey Institution, entitled "Testing for Mannose," by F. H. Storer, was published.

As mentioned in previous reports, more room is urgently needed in the Stone Building for the accommodation of the ordinary exercises of the School. A separate fire-proof building for the library also is of the nature of a necessity.

F. H. STORER, *Dean.*

## THE LIBRARY.

TO THE PRESIDENT OF THE UNIVERSITY: —

SIR, — I have the honor to submit my fifth annual report on the Library, covering the year 1901–02.

Another year of generous growth in our collections, another year of administration hampered by crowded rooms, overflowing shelves and lack of the desired conveniences for study, makes more pressing than ever before the urgent necessity of a new library building or of a greatly enlarged and improved building. That this is also the greatest need of the University is matter of common remark and the general opinion of members of the University. More shelf room is needed for our constantly increasing store of books, but still greater is our need of better conveniences for using what we have. The Library is at the focus of all college work that is not carried on in laboratories; in fact, it is itself the laboratory for all work in historical, literary, economic, and philosophic fields, while it also gathers and preserves record material essential to the students of science and art. Admirable laboratories equipped with abundant material and apparatus have already been provided for most of the scientific departments. Equally good facilities should be at the disposal of workers in these other fields, both professors and students; and it is not too much to expect that Harvard University should possess a building for its Library as perfectly and generously adapted to its purpose as it is possible to devise.

That the University may be prepared to erect such a building when the opportunity to do so appears, the Corporation, at the request of the Library Council, on December 31, 1901, appointed a Committee to study the Library's needs. This Committee consisted of Professor E. C. Pickering, the Director of the Astronomical Observatory, Chairman, the Librarian of the University, and Messrs. J. H. Arnold, R. S. Morison, and Samuel Henshaw, librarians respectively of the Law School, Divinity School, and University Museum. The Committee met at frequent intervals during the winter, and on March 31, 1902, presented its report to the Corporation.

With your permission I will attempt to state as concisely as possible the results of the Committee's study. Being unhampered by any specified limitations as to expense, the Committee was free to consider what was in itself desirable for the Library, not what could be accomplished with a given sum of money. It refrained from

proposing any detailed architectural plan, and from making any final recommendation as to the relative advantages of changing over and enlarging the present building or beginning anew. It studied simply what the needs of the Library were, not how they could best be met, and it tried to present these needs in as specific a form as possible.

As a preliminary measure, the Committee invited to an evening conference in Phillips Brooks House the members of the Corporation, of the Faculty of Arts and Sciences, and of the Library Staff, together with a few other persons interested, and sought to learn their opinions on several points of general policy. The remarks made at this meeting, which showed on the whole a surprising unanimity of opinion, were carefully considered by the Committee, and were made the basis of its own conclusions.

In the first place, it was clear, the Committee thought, "that the general policy of the Harvard Library ought not to be a policy of disintegration into scattered special collections (though cases of such separation already exist and still others may prove desirable), but a policy of centralization, and that therefore ample provision should be made for the growth and use of this central collection."

In regard to the special working collections now scattered in many buildings, the Committee declared that "the greater number, perhaps all, of these should properly be placed under the same roof with the Central Library, each in a separate room or rooms of its own, to which only the advanced students and the instructors in each department would ordinarily have access." Facilities of this kind for conducting research in close connection with the resources of the general library the Committee likened to the laboratory facilities provided for scientific departments. "On it, in their opinion, even more than on any increase in an abundant supply of well selected books, must depend during the next twenty years the continuance of the primacy of the Harvard Library among American college libraries."

In regard to the separation of "live" and "dead" books, that is of books frequently used and those seldom wanted, and the possible elimination of any considerable number of the latter, the Committee pointed out that while there were a few classes of books, such as out-of-date scientific text-books and treatises, old editions of encyclopaedias and other reference-books, school editions of the classics since re-edited in better form, and some others, where judicious exchange or transfer to other institutions might avoid duplication and bring some relief to crowded shelves, it was nevertheless true that nine-tenths of the so-called dead books "constitute in one way

or another the record of human thought, expression, action, condition or discovery" and are therefore "the original sources to which students of philosophy, literature, history, economics, and science turn for the material on which they work." The Committee's opinion was therefore clear that while seeking what relief it could get from coöperation with neighboring libraries, the Harvard Library "must maintain and administer its collections undiminished (with inconsiderable exceptions) — collections which it has brought together at great pains and expense and with the best expert advice."

The needs of the Library the Committee stated in the following general terms, making under each head specific recommendations as to dimensions, seating capacity, shelving, etc. : —

"I. Two or more large reading-rooms, in which are to be kept general reference books and current periodicals, and reserved books for all the elementary courses and for some of the more advanced courses"; — with provision for 500 readers, and shelving for 35,000 volumes.

"II. A series of rooms of moderate size having as far as possible the privacy and attractiveness that belong to a good private library, one or more for each of the departments that maintains or desires to maintain a separate working reference library for its advanced students. Some of these rooms should provide the regular places of meeting for small advanced courses. Opportunity for quiet study should also be provided for professors and visiting scholars." Rooms from 25 × 15 to 25 × 30 feet in size were suggested.

"III. A bookstack substantially like the present one, large enough to allow the reclassification of the library to be completed and to hold the accessions of at least the next fifteen or twenty years, with definite plans for future enlargement." The Committee suggested an improvement over the present library stack in the interest of economy of space and proposed to provide for double the present capacity.

"IV. Suitable rooms for the books on fine arts and archaeology, for the archives and other historical material relating to the College, for manuscripts, for the maps, and for other special collections." For these sections of the Library and for newspapers, the ordinary stack-construction is unsuitable, and does not provide either for safe preservation or for convenient use. "A room in which rare and interesting books can be exhibited, and in which from time to time may be held exhibitions to illustrate special subjects, is needed. Provision should likewise be made for the care of special collections of rare and valuable books which may be given to the Library and which must be carefully guarded."

"V. Convenient and ample administration rooms."

In regard to these last I need not enter into details, but will simply refer to the Committee's report. At every point the present accom-

modation has become inadequate, and larger rooms are needed for the card catalogue, and the delivery desk, for the shelf department, the cataloguing department, and the order department, besides rooms for typewriters, for the storage of duplicates and supplies, for bicycles, for luncheon, etc.

The cost of such a building as would be required the Committee estimated would be not less than \$750,000. A few words the Committee added on the importance of giving architectural distinction to the Library, which I beg to quote, since it is a subject about which I feel strongly myself. "Not only should the new Library be as perfect in plan and equipment as a wise and generous expenditure can make it; it should also, avoiding any display of costliness, possess a beauty and dignity of its own both within and without, that it may be a constant source of pleasure and inspiration to all who use it. Such added beauty and dignity will doubtless increase the cost of the building, but the Committee earnestly hopes that the means to make the library complete in this respect as well as in conveniences of daily service will not be wanting."

In regard to the possibility of carrying out the Committee's recommendations, I can only repeat what I said last year. "For relief we can only look to some lover of learning who unites generosity toward the College and a broad-minded liberality with the possession of large resources; it is evident that our needs are really two—ample means to build a library as perfectly adapted to its purpose as good design and wise expenditure can make it, and an increased endowment to meet the necessarily larger cost of administration in the larger building."

After an interval of four years the publication of further Bibliographical Contributions has been taken up, and number 54, A Bibliography of Justin Winsor, by William F. Yust, of the New York State Library, was issued in the early autumn of 1902. Others are in course of preparation. Part of the income of the R. M. Hodges Fund, amounting to about \$300 a year, has been assigned to the support of this work.

The publication in December, 1901, by Mr. Hiram Bingham, Jr., at his own expense, of the letters of William Weeks, of the Class of 1775, written while serving as paymaster in the Continental army, may be mentioned in connection with the Library's publications, since these letters were acquired by the Library last year. Mr. Bingham printed them primarily for distribution to friends, but agreed to send twenty-five copies to libraries designated by us, and in addition placed a small number on sale.

The accessions to the libraries of the University for the year, and the present extent of each are shown in the following table:—

ACCESSIONS.	Volumes added.	Present extent in	
		Volumes.	Pamphlets.
Gore Hall (College Library) . . . . .	14,017	400,263	265,000
Law School . . . . .	5,059	67,582	6,825
Divinity School . . . . .	1,991	32,568	8,307
Medical School . . . . .	36	2,352	..
Dental School . . . . .	66	595	3,580
Bussey Institution . . . . .	60	4,300	11,300
Museum of Zoölogy . . . . .	1,129	34,458	28,194
Peabody Museum . . . . .	131	2,766	2,858
Astronomical Observatory . . . . .	292	10,369	17,179
Gray Herbarium . . . . .	208	8,012	6,130
Arnold Arboretum . . . . .	690	8,954	..
Twenty-eight Special Reference Libraries .	6,917	34,924	..
Total . . . . .	30,591		
Deduct, transfers between Gore Hall and Department Libraries . . . . .	198		
Total . . . . .	30,393	607,143	349,373 <sup>1</sup> <sub>22</sub>

Of the 14,017 volumes added to the Gore Hall collection, 7,400 came by purchase or exchange, 1,359 as the result of binding serial publications, and 610 by binding pamphlets separately, while the remainder, 4,648 volumes, were received by gift.

17,679 pamphlets have been received, 16,230 by gift, and 1,449 by purchase or exchange. 524 sheets of maps have been added to the map collection, which now numbers 20,192 sheets. Dr. Malcolm Storer, the Curator of Coins, reports the addition of 139 pieces to the numismatic collection.

The total gifts to the College Library during the year 1901-02 and the previous five years have been as follows:—

GIFTS TO THE COLLEGE LIBRARY.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.	1901-02.
Volumes . . . . .	5,048	2,646	7,096	11,360	4,749	4,648
Pamphlets . . . . .	8,427	11,365	12,448	11,072	14,235	16,230
Totals . . . . .	13,475	14,011	19,544	22,432	18,984	20,878

The rate at which the Library grows shows a steady increase. In the five years, 1880 to 1885, the average annual growth of the



Library was about 9,100 volumes; in 1885 to 1890, 9,800 volumes; in 1890 to 1895, 10,400 volumes; in 1895 to 1900, 12,800 volumes; while the additions of the last two years have been about 13,800 and 14,000 volumes respectively. The Library has doubled in size since 1881 and quadrupled since 1861.

Other college libraries have grown even more rapidly in proportion to their size. Cornell's 255,000 volumes have doubled since 1892 and quadrupled since 1886; Columbia, with 300,000 volumes, had only half that number in 1894, and one-fourth as many so recently as 1888. This prospect of indefinite accumulation at an ever increasing rate can not be faced with equanimity. It is evident that at some point the present policy of maintaining intact the accumulations of a large library must be modified. Opinions will differ as to the point at which a halt in the increasing rate of growth should be made. It may be at a million volumes, or two million volumes, or even more; but the general policy to be pursued demands serious consideration. One solution of the difficulty is to be found in the suggestion made at a conference of librarians last spring during an informal discussion on the ultimate condition and policy of the large libraries, — the libraries that feel under obligation to preserve as records immense masses of printed matter.

It was suggested that in several great centres in the United States storehouses should be established to collect and preserve the books which in course of time will necessarily be crowded out from the libraries, large and small, of the several sections of the country. In the immediate vicinity of Boston, for instance, in some place where land is not too expensive and where sufficient isolation to insure protection from fire can be had, a fire-proof but absolutely plain building with compact bookstack could be erected, of small size at first, but capable of great enlargement. To this storehouse would be sent from time to time the overflow from the Harvard Library, the Boston Public Library, the Boston Athenaeum, the Massachusetts State Library, and perhaps from other libraries large and small all over New England. Duplicates received from these sources would, for the most part, be rejected, or sold, or sent to some other depository, but one copy at least of every book received would be retained and made accessible to the few persons who would have occasion to consult the collections so deposited. The expense of administration, divided among the libraries most interested, would be relatively light, and the cost of the building, which could be built section by section as required, would not be heavy. The relief afforded by such a plan to other libraries, which are constantly crying out for more shelf-

room, is undeniable; and the economy of preserving only one copy of books of the kind that would be sent to such a storehouse is evident; while if duplicates of some of the more valuable works that might be received were retained, they could be freely lent to other libraries.

The proposal is not without its difficulties; questions of support, of administration, of scope, and of use immediately occur and are not easy to settle off hand, but I should like to see the matter seriously discussed by librarians. If found practicable, such a policy ought to be definitely entered upon within the next ten years. I need hardly add that it has no bearing, in my opinion, on the immediate need of this Library for enlargement, but only on the ultimate limit to be kept in view, and on the plans which should be made for the more distant future.

Among the gifts received during the year are the following: a gift of \$500 from Mrs. Emil C. Hammer, of Boston, in continuation of earlier gifts for the purchase of books on Scandinavian literature and history (a part of the sum being applied this year, at the donor's desire, to a concert of Danish music in Sanders Theatre); a gift of \$300 from J. Harvey Treat, Esq., of Lawrence, supplementing an earlier gift of the same sum, for works on the catacombs and early Christian antiquities; a gift of \$250 from Mr. Alain C. White, of the Class of 1902, for editions of Dante and works relating to him; a gift of \$150 from the Dante Society for the same purpose; a gift of \$50 from Mr. Harold J. Coolidge (in continuation of his previous gift) for books on China; a gift of \$20 from an anonymous friend for books on aeronautics; gifts amounting to \$800 from Professor A. C. Coolidge for further increasing the collections on the Ottoman Empire, Slavic countries and Morocco; subscriptions amounting to \$1019.50 collected by Mr. Edgar H. Wells, of the Class of 1897, to be spent in the purchase of English literature of the period from 1660 to 1780\*; subscriptions amounting to \$800 received through Mr. John F. Moors (Class of 1883), for the special reference library of the Department of Education. The Corporation also assigned \$1,000 from the Barthold Schlesinger bequest to the German Department for the purchase of books for its reference library.

Portraits of the members of the Classes of '53, '56, '57, '60, '66, '67, and '69, with many portraits of professors and views of the Col-

\* The Library is also indebted to Mr. Wells for long continued and painstaking investigations on the literature of this period, and for carefully made lists of works which it would be desirable to acquire.

lege accompanying them, have been received from members of those classes to be placed in the general collection of Harvard portraits, and I hope that portraits of other classes may be given to us from time to time. Later portraits of Harvard graduates are also always acceptable.

From the estate of Professor E. W. Gurney, we have received a final gift of 1,288 volumes from his library, following two other large and valuable instalments received some years ago.

Professor Norton has placed in the Library several of the autograph manuscripts of James Russell Lowell's works, and intends eventually to make this Library the depository of all the Lowell papers in his hands. The Library already has the letters of Charles Sumner and the extensive manuscript collections and private papers of President Sparks, and it is to be hoped that the papers of other distinguished sons of Harvard may eventually find a place here where they may be sure of receiving constant and loyal care.

Miss Anna Q. A. Parsons, of Roxbury, has presented two interesting water-colors made between 1805 and 1810 and long in the possession of her father, Nehemiah Parsons. One is taken from near the old Holmes house and shows the College buildings, the buildings in Harvard Square, and the unenclosed Common in the foreground, the other from a position in front of Christ Church looks across the Common and includes the houses from the Waterhouse house on the left to the Holmes house on the right.

From Col. John Glas Sandeman, of Whin Hurst, Hayling Island, England, the Library has received thirty-one original sketches by Frank Vizetelly, the artist and war correspondent of the London Illustrated News, who served his paper within the Confederate lines during the American Civil War. His drawings, from which the cuts in the News were made, give a vivid impression of the scenes portrayed, while the artist's hurried pencil notes on the back describe persons and events.

Mrs. C. L. Rice of Grange Erin, Douglas, County Cork, Ireland, has sent to the Library two historical documents of great interest, the ms. journals of Capt. Henry Hamilton, British Governor of Detroit from 1774 and later Governor of Bermuda and Antigua. One is the contemporary account of his expedition from Detroit to Fort St. Vincent (Vincennes) which he captured in December, 1778, to be himself taken prisoner by Col. George Rogers Clark in the following February, when he was sent to Williamsburg, Va., and suffered very harsh treatment. A report made by Capt. Hamilton after his return to England is now in the Ottawa archives and has

been printed in the Michigan Pioneer Collections, but the journal itself, full of vivid detail, has never seen the light. The second document is a volume of reminiscences written in 1792, covering his service at several posts in England in 1755-56, his embarkation for America with the 58th regiment, his account of the capture of Louisburg, his visit to Boston, Newport, New York, and Philadelphia in the following winter, his part in the siege and capture of Quebec (1759), his life at a nunnery on garrison duty during the winter, the subsequent attack of the French by whom he was made prisoner in April, 1760, his detention in Montreal, his journey to New York to be exchanged, and finally his departure in the autumn of 1761 with the expedition which captured Martinique and Havana. Mrs. Rice has also sent a number of letters, sketches by Hamilton, and miniature portraits of Hamilton and his wife. The two journals it is proposed to publish as a special publication of the Library.

Among the more important purchases of the year may be noted a further collection of about 700 volumes which had belonged to Count Riant, but had been omitted from the main library received two years ago; about 125 volumes relating to the history of Sicily, bought with a special appropriation made by the Library Council; several editions of Tasso and a number of recent commentaries to round out the Tasso collection received with the Riant books; a collection of Russian pamphlets relating to Nihilism, published at Geneva; some fifty volumes on the history of printing, mostly in Dutch; thirty French cartularies, bought for the immediate purpose of providing material for the study of early French linguistics, but also of importance as historical records; a number of books on the gypsies, many of them from the library of R. von Lowa, an authority on the subject; a remarkable collection of early editions of Swift, mainly from the library of Col. Francis Grant, including first editions of *Gulliver's Travels* and the *Drapier Letters*; first editions of other 18th century writers, including Richardson, Fielding and Smollett, and a set of the original numbers of the "Tatler"; also over 70 quarto plays of the 17th and 18th centuries, picked up in England by Professor George P. Baker. Of other single volumes or sets, the following are some of the more important: the *Proceedings of the Royal Dutch Geographical Society, of Amsterdam, 1872-1900*; the *Indische Gids, 1879-97*, perhaps the most important Dutch periodical publication; the *Monumenta Hungariae historica, 56 volumes*, to complete a partial set received in the Riant library; the *Russkaya Starina, of St. Petersburg, 1870-99, 100 volumes*; the *Variétés sinologiques, published in China from 1892 to 1901*,

relating to a variety of Chinese subjects; Theal's Records of Cape Colony and Records of South-eastern Africa, 15 volumes; Assemann's Codex Liturgicus, 13 volumes, quarto, a photographic reproduction of the edition of 1749-56; Balaquer's Historia de la Cataluña, 1885-87, 11 volumes; Juan de la Concepcion's Historia general de Philipinas, Manila, 1788-92, 14 volumes; Tellez's Historia geral de Ethiopia, 1660, a work of great rarity (this copy from the Heber library), and supposed to be the unacknowledged source of many of Bruce's statements in regard to his African travels; a manuscript history of the Ottoman Empire by Kante-mir; a Latin manuscript on vellum of the 15th or early 16th century, containing an important text of Tacitus, beside other classical texts; the Encyclopaedia Cambrensis, 11 volumes (in Welsh); Martin and Cahier's Monographie de la cathédrale de Bourges; Magherini-Graziani's L'arte à Città di Castello; Kip and Knyffe's Nouveau théâtre de la Grande Bretagne, 1713-16, a collection of important plates representing English buildings and country places; Halliwell's great edition of Shakespeare, in 16 volumes, folio (the last two works, with some first editions of American authors, were bought with part of the gift of the Saturday Club of Boston); Howell's Londinopolis, 1657; and the full orchestra scores of Wagner's Lohengrin and Rienzi. Many dictionaries and grammars of the less-known languages have been added to our shelves in continuation of systematic purchases in this field made last year.

A library devoted to Education has a place in this list for the first time. This library consists of two parts, works on education and text-books, the latter being for the most part given by their publishers and forming an exhibit useful not only to students in the University but to teachers in general, who are invited to visit and examine the collection on Saturdays. The books are classified by subjects.

The Lowell Memorial library now includes the books from Mr. Lowell's library which were bought by subscription two years ago. The German library is to be greatly enlarged at the expense of the Schlesinger bequest, orders for about a thousand dollars' worth of books having been placed during the summer. The Music library has been nearly doubled, the result of a special appropriation by the Corporation. The Lowell library and the Engineering library both had to be reclassified, while a new classification and numbering had to be provided for the Education library. All of this was done by Mr. McDaniel, who had to be withdrawn for this purpose from work

in the shelf department. When Mr. McDaniel left us to take a position in the library of the Bar Association in New York, the work on the Education library was continued by Mr. Runo.

## SPECIAL REFERENCE LIBRARIES.

The present extent of these libraries is as follows :—

SPECIAL REFERENCE LIBRARIES.	Perma- nent.	On Deposit.	Totals.
1. Chemical Lab. <i>Boylston Hall</i> . . . . .	585	956	1,541
2. Physical Lab. <i>Jefferson Phys. Lab.</i> . . . . .	28	367	395
3. Botanical Lab. <i>University Museum</i> . . . . .	586	124	710
4. Geological Lab. <i>Do.</i> . . . . .	119	..	119
5. Mineralogical Lab. <i>Do.</i> . . . . .	472	230	702
6. Phys. Geography Lab. <i>Do.</i> . . . . .	348	176	524
7. Zoölogical Lab. <i>Do.</i> . . . . .	273	..	273
8. Classics. <i>Harvard Hall 3</i> . . . . .	3,609	147	3,756
9. History. <i>Harvard Hall R. R.</i> . . . . .	2,266	17	2,283
10. United States History. <i>Harvard Hall R. R.</i> . . . . .	883	8	891
11. Political Economy. <i>Do.</i> . . . . .	1,183	1	1,184
12. Social Questions. <i>Do.</i> . . . . .	847	6	853
13. Child Memorial (English). <i>Warren House</i> . . . . .	4,260	90	4,350
14. Lowell Memorial (Romance). <i>Do.</i> . . . . .	1,427	6	1,433
15. German. <i>Do.</i> . . . . .	538	..	538
16. French. <i>Do.</i> . . . . .	2,456	..	2,456
17. Sanskrit. <i>Do.</i> . . . . .	904	17	921
18. Semitic. <i>Semitic Museum</i> . . . . .	1,161	..	1,161
19. Mathematics. <i>Sever 22</i> . . . . .	429	80	509
20. Mining and Metallurgy. <i>Rotch Laboratory</i> . . . . .	36	17	53
21. Engineering. <i>Pierce Hall</i> . . . . .	5,733	511	6,244
22. Music. <i>Holden Chapel</i> . . . . .	299	..	299
23. Philosophy (Psychol. Lab.). <i>Dane Hall</i> . . . . .	580	41	621
24. Education. <i>Lawrence Hall</i> . . . . .	4,196	..	4,196
25. Fine Arts (incl. Gray and Randall Coll.). <i>Fogg Museum</i> . . . . .	836	..	836
26. Architecture. <i>Robinson Hall</i> . . . . .	717	10	727
27. Preachers' Library. <i>Wadsworth House</i> . . . . .	94	..	94
28. The Study. <i>Phillips Brooks House</i> . . . . .	59	..	59
<b>Totals</b> . . . . .	<b>34,924</b>	<b>2,804</b>	<b>37,728</b>

Although these libraries have been regarded as offshoots of the Central Library and are in most cases under the immediate supervision of the Central Library, it has been the general policy not to spend library funds for their increase. As in the case of the libraries in German, Music and Education during the past year,

they have been provided for by special appropriations, subscriptions or gifts.

USE OF BOOKS IN THE COLLEGE LIBRARY.

The following table shows the use of books at Gore Hall in 1901-02 as compared with previous years:—

Use of Books.	1895-96.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.	1901-02.
1. Books lent . . . . .	59,781	59,611	61,272	63,005	63,712	63,673	58,443
2. Used in the building (Recorded use only.)	22,230	22,965	27,017	25,595	23,715	24,180	22,583
Totals . . . . .	82,011	82,576	88,289	88,600	87,427	87,853	81,026
3. Over-night use of Har- vard Hall Reading- room . . . . .	. . .	9,288	11,938	12,046	13,460	13,566	13,594

The sudden decrease in the number of books loaned is unexpected and difficult to account for. The opening of an attractive and well-stocked library in the Harvard Union would naturally make some difference in the borrowing from the College Library, but I should not have anticipated so large a change from this cause alone. I am unable, however, to trace any other disturbing element, though there may always be changes from year to year in the way in which certain of the large courses are conducted, requiring more or less use of the library. If the whole or the greater part of the falling off is to be ascribed to the Union, it is striking evidence of the greater pleasure to be had in picking out one's own books from well selected open shelves, even though the books must be read on the premises, than in sending for them by messenger after searching in a card catalogue, though the stock to select from be larger and though the books may be taken to one's own room and kept for a month. It should also be remembered that loans from the College Library have a tendency to diminish with the growth and use of department and special reference libraries, with the increase and improvement of club libraries in general, and with more free access to the shelves in the College Library itself.

Of the constant use of the reserved books in the reading-room, and of the collections of reference books, periodicals, and United States documents, freely accessible to all, no record is possible.

The extent of these open collections and their growth is shown in the following table:—

OPEN COLLECTIONS.	1897-98.	1898-99.	1899-00.	1900-01.	1901-02.
Bound Periodicals . . . . .	3,818	3,275	3,275	3,140	3,210
Reference Books . . . . .	3,853	4,142	4,224	4,235	4,393
Reserved Books . . . . .	8,117	8,344	10,134	10,557	10,141
U. S. Documents . . . . .	3,592	3,664	3,887	4,698	4,389
Total . . . . .	19,375	19,425	21,520	22,630	22,133

The number of bound periodicals keeps about the same because the shelf room for them is limited, and as the collection receives its necessary yearly increase, one set after another has to be removed to the stack. The number of United States documents has diminished for the same reason. The shelves were badly overcrowded and relief has been obtained by picking out and withdrawing the volumes belonging to the more bulky series, such as the Rebellion record, the Geological Survey reports and the like sets which are not naturally sought in this collection and can be made more available elsewhere.

The books shelved in the reading-room, together with those in the various special reference libraries in Harvard Hall, Warren House, and elsewhere, amount altogether to about 60,000 volumes to which direct access can be had by all students to whom they are of value. In addition the library of the Harvard Union now offers to its members over 5,000 books, mainly literature, biography, history, travel and sport.

Cards of admission to different sections of the book-stack continue to be given, on recommendation of an instructor, to all advanced students who need to go directly to the shelves for purposes of investigation in connection with their work. Such students have the same facilities for the examination and study of all the resources of the Library, in their chosen departments, that the officers of instruction enjoy. The use of these cards of admission to the book-stack is shown in the following table:—



ADMISSION TO THE BOOK-STACK.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.	1901-02.
History . . . . .	63	66	54	51	78	112	81	90
Science . . . . .	9	4	11	33	43	30	36	37
Art and Archaeol. (including Music) . . . . .	5	11	18	34	38	33	33	55
Literature . . . . .	58	63	64	90	90	85	74	80
Classics . . . . .	44	41	41	52	60	70	58	70
Philosophy . . . . .	12	6	4	11	19	19	22	27
Theology . . . . .	3	1	1	3	5	1	1	14
Political Economy . . . . .	15	12	4	9	12	13	13	16
Education . . . . .	..	1	5	2	8	4	7	4
Geography . . . . .	..	..	8	14	2	3	9	15
Publ. of Learned Societies . . . . .	..	..	..	..	..	..	16	8
<b>Total . . . . .</b>	<b>209</b>	<b>205</b>	<b>210</b>	<b>299</b>	<b>355</b>	<b>370</b>	<b>350</b>	<b>416</b>
Times of use . . . . .	4,352	4,601	4,381	5,750	5,826	6,898	6,067	5,551

The number of individuals admitted was 301, not 416, because the same person often receives permission to use different parts of the book-stack.

The number of students who take books from the Library, and their relation to the whole number connected with the Cambridge departments of the University, is shown in the last three years and at previous ten-year intervals in the following table : —

STUDENTS OF	1874-75.		1884-85.		1894-95.		1899-00.		1900-01.		1901-02.	
	Whole No.	No. taking books.	Whole No.	No. taking books.	Whole No.	No. taking books.	Whole No.	No. taking books.	Whole No.	No. taking books.	Whole No.	No. taking books.
Divinity . . .	20	16	26	26	50	40	27	27	28	24	37	32
Law . . . . .	139	63	153	122	404	176	613	241	647	246	628	236
Scientific . .	29	21	28	21	308	144	495	218	507	234	549	227
Resident Grad.	55	18	70	52	242	204	313	289	327	294	301	248
Senior Class .	152	109	191	170	327	318	310	257	388	308	346	325
Junior Class .	159	96	234	216	348	335	392	311	380	302	412	314
Sophom. Class	208	124	256	220	425	323	508	380	536	424	533	410
Freshm. Class	197	108	255	205	399	236	498	308	537	364	551	363
Sp. Students .	..	..	..	..	168	127	194	145	151	112	141	96
<b>Total . . .</b>	<b>959</b>	<b>555</b>	<b>1213</b>	<b>1032</b>	<b>2671</b>	<b>1903</b>	<b>3350</b>	<b>2176</b>	<b>3501</b>	<b>2808</b>	<b>3498</b>	<b>2251</b>

The fluctuations in this table continue as usual, and are hard to understand. It may be noted that the decline in the total registration of students from the figure of last year is less in proportion than the decline in the number of books borrowed. The use by members of the Senior class comes up from its lowest recorded figure the previous year (79 per cent.) to almost its highest point, 94 per cent., while of the Junior class only 76 per cent. were registered at the Library, which is nearly the lowest proportion recorded. The registration from other classes is nearly the same as in the previous year, but during the last five years the registration of the Sophomore class has varied from 68 per cent. to 87 per cent., and of the Freshman class from 56 to 80 per cent. The only thing to be said is, that it is a pity that more men do not take advantage of the fact that they are free to use one of the best and largest libraries in the country, and do not take more pains to become acquainted with books and subjects outside the circle of their daily studies. One reason for this is, of course, pressure of work that they are directly engaged in; a second reason is the variety and richness of other outside interests which engross their attention, and a third is doubtless the fact that the books placed in the reading-room of the Library are presented as a working collection simply, being, outside of reference books, those which instructors have asked should be reserved for the use of students in connection with their college work. I have often thought that the library would reach more men and exercise a wider influence if the reading-room collection to which students have access were a more comprehensive collection, comprising the best books on all subjects instead of simply those which have a direct bearing on the college courses. The collection would, of course, include all the latter, but it would add to them books whose value lay in other directions, and would thus become not merely a working collection of reference books, but a well selected comprehensive library. Such a plan cannot be carried out in the present reading-room on account of lack of wall-space, and there would always be difficulties in adapting it to the needs which the present system of reserved books meets so well. In the meantime, it is fortunate that the library of the Harvard Union has begun to offer some of the advantages of such a collection, and especially in fields which the College reading-room has not attempted to occupy.

The use of the Library by students of Radcliffe is shown in the following table. In our present building only very meagre opportunities for reading can be afforded to Radcliffe students, but a messenger comes to the Library daily to take to Radcliffe College books

sent for by the students. Since the lending of reserved books ceased in 1896, and with the growth of Radcliffe's own library, borrowing from the College Library has naturally declined.

BOOKS LENT TO RADCLIFFE.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.	1901-02.
Borrowers . . . .	156	155	167	146	137	121	148	126
Books borrowed . .	1,672	1,502	1,320	1,191	1,273	1,125	952	845

In the course of the year the temporary use of the Library has been granted to 155 persons not connected with the University, who have come to Cambridge for purposes of study. As in other years frequent applications for the loan of books have been received from other libraries, especially college libraries, and from scholars in distant parts of the country, and the Library has sent away 644 volumes in response to these requests. No instance of loss or injury has occurred, and it is thought that the convenience of college officers and of other scholars in Cambridge has not been interfered with by the temporary withdrawal of these volumes.

The Sunday use of the reading-room is shown in the following table. The room is open, to readers only, every Sunday in term-time from one to half-past five in the afternoon.

SUNDAY USE.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.	1901-02.
Sundays open . . . .	36	24	35	35	35	35	35	36
Users . . . . .	3,634	2,359	5,010	4,635	5,093	4,846	5,471	4,909
Average . . . . .	100	98	143	132	145	138	156	136
Highest No. . . . .	131	140	227	297	260	236	226	225

The decline in the Sunday afternoon use of the Library was to have been expected, and is no doubt due to the fact that the Harvard Union offers a pleasant place for both reading and writing on Sunday afternoons. When the Library was first opened on Sunday in October, 1880, the intention was not to provide the means for Sunday work, but to furnish a place where Sunday afternoon could be agreeably and profitably passed, there being at the time no other opportunities of this kind. As a matter of fact, the reading-room is now used mainly for college work, rather than for recreation, and a petition was received last January, signed by a considerable number of students, asking that the reading-room might be open in the evening instead of in the afternoon, in order that those men who wished to read on Sunday might be at home or out of doors during

the afternoon, and do their reading in the evening. After careful consideration of the matter, it did not seem desirable to open the Library in the evening instead of the afternoon, since in the afternoon books may be called for from the stack, and officers of the University may, if they please, have the use of the stack, which would be impossible in the evening; and there was objection to keeping the reading-room open in the evening in addition to the afternoon, on the ground of its causing unnecessary increase of Sunday labor. Those who are in charge of the reading-room during the evening and on Sunday are already as constantly employed as they ought to be, and I should be sorry to have any further burden put upon them.

SHELF DEPARTMENT.

Mr. Frank Carney, who has charge of the current work of the shelf department, reports 11,999 volumes permanently located in the stack during the year, 10,213 added to classes previously arranged, and 1,786 newly classified, making 294,996 volumes so placed of the entire Gore Hall collection.

The newly classified sections are the following:—

	Volumes.
Morocco, history, travel, etc. . . . .	57
Austria, history, travel, etc. . . . .	781
Educational Periodicals . . . . .	948
	1,786

The staff of the shelf department has now been reduced to practically its lowest limits, and not much headway in reclassification can be expected until an enlargement of the building gives increased shelf capacity. It should be noted, however, that the figures above do not fairly represent the work of the year, since the greater part of the books relating to Education have been arranged, but the work not being yet complete, they are not included in the record of work done.

The books on Austrian history had previously been placed with German history, and no suitable provision had been made for the somewhat complicated arrangement of a subject which includes so many different races and interests. The incorporation of a large number of books received in the Riant library was the occasion for working over the classification of these books. The Slovak collection, brought together by Professor Wiener in the summer of 1901, has also been arranged, but, like the books on Education, is not yet counted. During the summer, by employing extra labor, the set of

United States documents was overhauled, and the serial numbering lately adopted by the Superintendent of Documents in Washington and used in all indexes and catalogues now published, was applied to the volumes, so that reference is more direct and easy than before. Improvements in the shelving were carried out, and the crowding of the collection relieved by the withdrawal of certain long sets to shelves in the book-stack.

In order to gain a little free space, it was decided to offer to the Boston Medical Library, on deposit, the larger part of the medical collection of the Library, to which very few additions of recent books had been made for many years. Before sending the books away, I examined them carefully in order to retain in the Library any which it might be undesirable to part with, and I was interested to find how many there were which had some claim on our continued hospitality. The local medical journals, for example, have local historical material and biographical matter; the medical statistics of armies and books on the diseases of a certain campaign have an historical value to the military student; works on comparative anatomy are wanted by the zoölogists; books by Harvard professors and Boylston Prize Dissertations should be kept to fill out our Harvard collection; books on the construction and organization of hospitals may be of interest both to the architect and to the student of social science; those on the structure of the brain and nervous system and their derangements are needed by the psychologist; the works of Hippocrates, Harvey, Sydenham, etc., are standard works to which any student of literature or history may have occasion to refer; volumes of medical essays frequently contain historical or biographical articles and others of a popular character; old books of *materia medica* contain curious accounts of extraordinary customs (such books are Schroeder's *Zoölogia*, 1659, and the *Secrets of Alexis*, 1562). All works on anatomy and physiology, including hygiene and dietetics, properly, as it seems to me, belong in this library, courses on these subjects and on zoölogy being given in Cambridge, but I have felt obliged for the present to send away all but the latest and most authoritative ones along with those of a strictly medical character. The books finally discarded and sent to Boston were 3,570 volumes, and these the Medical Library has agreed to receive on deposit, the expense of new shelving for their accommodation being equally divided between that library and this library. The books may be withdrawn at any time, but I think there is no probability that we shall ever want to recall those that relate to purely medical subjects. It is a step toward the coöperation between different libraries of the same vicinity

which is theoretically so attractive and practically so difficult to adopt on any extensive scale.

The work of the shelf department has for several years been carried on in two distinct parts of the Library, under conditions at once inconvenient and unhealthful. All the work of the department has lately been transferred to the bay on the west side of the West Stack, a space which had been left for the accommodation of readers. Here the work of the department can be carried on to good advantage, and is no more crowded than are all the other administrative departments of the Library. The rapid filling up of our shelves makes necessary a constant shifting of books, and doubling on the same shelf has occasionally been resorted to in the case of long sets.

Mr. Carney reports the loss of 104 volumes during the year, equally divided between the book-stack and the open shelves. 43 volumes missing at the last examination have been found in the course of the year. Our net loss for the last nineteen years has been an average of 47 volumes a year. The usual examination of the shelves was carried on throughout the year and covered about 335,000 volumes. One complete examination and comparison with the shelf-lists occupied two men and two boys a little over a month in the course of the summer. The greater part of the library was examined twice beside this for the purpose of correcting misplacements on the shelves.

#### CATALOGUE DEPARTMENT.

On May 21, 1902, the Catalogue Department was placed in the immediate charge of Mr. T. Franklin Currier, who has been a member of the Library staff since November, 1894.

The work of the Department as compared with previous years is roughly shown by the following table:—

CATALOGUE WORK.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.	1901-02.
Titles catalogued						
for College Library . .	8,990	9,974	12,276	12,738	24,169	16,425
for Departments, etc. .	2,320	3,026	2,087	2,378	3,361	6,594
Total . . . . .	11,310	13,000	14,363	15,116	27,530	23,019
Cards added to Catalogue .	21,282	25,093	22,995	26,055	30,303	31,419

Last year's count of titles (24,169) was swelled by the 11,500 titles catalogued by abbreviated methods, a measure made neces-

sary by the large accessions of the last three years. The accessions still continue to exceed what the staff can deal with in a final and satisfactory manner, but only 2,936 titles have been added to the "partially catalogued" collection, while the titles fully catalogued (excluding analytical entries) number 9,226 against 6,727 of the previous year and 6,539 of the year before. This shows, I believe, a gratifying increase in efficiency, since there has been but a very moderate increase in the size of the staff.

The increase in work done for the department libraries has been due mainly to the large number of text-books (about 3,000) catalogued for the Education library. A rough record of these had already been made, so that the work required was much less than it would otherwise have been. It was not thought worth while to make any entry of the greater part of these books on the card catalogue of the Central Library.

A larger number of extra assistants to supplement the labors of the regular staff have been employed than has been customary heretofore, some for specially difficult work from time to time during the year, others for back work or extra jobs during the summer. Mr. H. H. Azarian, a student in Boston University, has helped us with Armenian books, Mr. H. S. Forman, of the Sophomore Class, on Slovak, Mr. V. E. Runo on Scandinavian, and Miss Sanders on Slavic books. During six weeks in the summer two new assistants (ladies) and Mr. F. L. Gay, a recent graduate of the State Library School, who supervised their work, took up 146 volumes of bound pamphlets which included all still remaining uncatalogued in American history and American literature, and added thereby 1,346 titles to the card catalogues, not including the pamphlets found in these volumes already catalogued and the excerpts from periodicals, cuttings, etc., thought to be of too little consequence to catalogue. Extra assistance was also used in disposing of the large Gurney gift received early in the summer, in lettering guides and labels, in changing shelf-marks on the cards, in placing new numbers on the United States documents, and in checking off on the shelf-lists and making ready to send away the medical books deposited with the Boston Medical Library.

Printed cards for the articles in transactions of learned societies, and other important periodicals are still received from the Publishing Board of the American Library Association, and 1,870 titles out of 3,137 received have been incorporated in the card catalogue. From the same source we have also received cards for the more important papers in the British Blue-books (the cataloguing of these for the

printer having been done with great care at this Library and at the John Crerar Library), and for the papers in the Massachusetts documents, as well as annotated cards for current works on English history. Cards indexing the contents of current bibliographical periodicals, prepared by the Bibliographical Society of Chicago, will also be issued by the same Board and will be useful to us. Other cards covering the publications of the U. S. Department of Agriculture are prepared and distributed by that Board, but most of the papers catalogued are of too special a nature to be incorporated in our general card catalogue. As a separate special index they have their value.

Our own printed cards we are sending regularly to the Library of Congress, and we have lately begun to send to the Library of the Episcopal Theological School in Cambridge cards for works that would be of interest to students there.

In November we began to receive from the Library of Congress printed cards for books to be used in our own catalogue. That Library has now put in operation the plan described in my report of last year. It receives of right all books copyrighted in this country; it receives by gift others; and it now buys foreign books extensively. All these accessions it catalogues by means of printed cards, and it is taking up one section after another of its general collections and cataloguing them in the same way. All of these cards it offers to other libraries at almost nominal rates, and it keeps constantly in stock, or is willing to reprint, every title which it has once issued, so that a library may order from it at any time. In the ten months beginning December 1st, 1901, this Library received from the Library of Congress 4,331 cards covering 1,211 titles, and the cost of these cards was \$40.22, something less than a cent a card or about three and one-third cents for each title. It is difficult to state the precise saving to the Library in dollars and cents, but that the saving is very large may be seen from the fact that by buying these cards from the Library of Congress at three and one-third cents a title, we save composition and press-work for which the College printer has charged us 22 cents a title; we save the card stock, the cost of which is included in the Library of Congress charge; we also save proof-reading and the larger part of the cost of cataloguing. On the other hand, we are put to some extra labor in ordering cards, in trimming them when received to the size used in this Library, punching the hole required for their use in the catalogue drawers, and ruling a red line on those which go into the subject catalogue, in adding the shelf-mark by hand, and in a constant watchfulness to



notice and provide against deviations from our own established forms when such deviation would cause confusion. But the expense of all these processes is inconsiderable compared with the saving in cataloguing and printer's bills, proof-reading and stock mentioned above. The type used we consider inferior to that which we have for many years employed on our own cards, and the cataloguing, annotations, giving of contents, etc., on the Library of Congress cards is fuller than has been thought necessary in this Library, but the accuracy and uniformity of the work is admirable, and the supply, in the case of American books, remarkably prompt. The use of these cards by American libraries should be extensive, and we are all deeply indebted to the Library of Congress for undertaking the plan and carrying it out so perfectly and efficiently. As a guide in its own purchases, the Library of Congress has asked this Library and several other large libraries to send to it a copy of its order sheets as dispatched to the several agents. These sheets come back to us with an indication of what books the Library of Congress proposes to buy, so that we know in advance which foreign books we are likely to be able to obtain cards for, while we are sure of finding practically all current American copyrighted books already catalogued. As the work done by the Library of Congress increases, we can expect to order a larger and larger proportion of the books we receive ourselves, but our own purchases of older foreign books are so large that it is, after all, only a small proportion of the books received by us for which we can buy cards from the Library of Congress. During the year 1901-02, of 25,429 cards added to our catalogue, 83 per cent. were written cards, 57 per cent. were cards printed by the College printer, and 10 per cent. were cards received from the Library of Congress. During the previous year, 30 per cent. were written cards, and 70 per cent. were printed by the College printer.

The Library of Congress desires to place in several library centres a complete file of the cards it prints, and it has offered to send such a file to this Library, but inasmuch as the Library of Congress prints at least 60,000 titles a year, the cost of maintaining and arranging the cards would be so great that I have not felt justified in undertaking it. At present also we have not the floor space for the necessary cases of drawers.

#### ORDERING DEPARTMENT AND FINANCIAL CONDITION.

The following table shows the income of our book-funds, receipts from other sources for the purchase of books, and expenditure for books during the last six years.

INCOME AND EXPENDITURE.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.	1901-02.
<b>From book funds, —</b>						
Balance from previous year	\$2,864	\$2,303	\$737	\$5,028	\$5,176	\$4,547
Income of the year . . . .	13,991	13,010	18,301	18,510	19,279	19,944
Total available . . . . .	16,855	15,313	19,038	23,538	24,455	24,491
Spent for books . . . . .	14,552	14,576	14,010	18,362	19,908	20,470
Balance to next year . . . .	2,303	737	5,028	5,176	4,547	4,021
<b>Special gifts, sales, etc. —</b>						
Balance from previous year	1,205	1,176	839	2,940	936	1,932
Received during the year . .	349	506	3,906	5,187	6,115	3,411
Total available . . . . .	1,554	1,682	4,745	8,077	7,051	5,343
Spent for books . . . . .	378	843	1,805	7,141	5,119	3,067
Balance to next year . . . .	1,176	839	2,940	936	1,932	2,276
<b>Total spent for books, —</b>						
College Library . . . . .	\$14,930	\$15,419	\$15,815	\$25,503	\$25,027	\$33,537
Department Libraries* . . . .	4,070	5,322	3,869	4,748	4,484	7,245
Total . . . . .	\$19,000	\$20,741	\$19,684	\$30,251	\$29,511	\$30,782

The work of the Ordering Department, in charge of Mr. Potter, is summed up in the following table:—

WORK OF ORDERING DEPARTMENT.	1897-98.	1898-99.	1899-00.	1900-01.	1901-02.
<b>New orders, —</b>					
Total received and examined . . . .	6,687	7,049	13,001	10,021	10,716
Already owned or ordered . . . . .	1,383	1,712	3,205	2,596	2,826
Forwarded . . . . .	3,746	5,010	9,612	6,782	6,696
<b>Estimate of cost, —</b>					
For the College Library . . . . .	\$6,765	\$9,510	\$19,255	\$14,759	\$14,590
For Departments . . . . .	3,306	1,942	3,066	2,510	4,956
Total estimated cost . . . . .	10,071	11,452	22,321	17,269	19,546
Shipments received from abroad . . . .	31	39	44	52	69
†No. of vols. bought for College Lib. . .	4,335	6,045	6,774	7,061	7,400
‡Total gifts examined and passed on . .	14,011	19,544	22,432	18,984	20,878

\* Not including the Law School, which spends from \$3,600 to \$11,000 a year for books, but does not order through the College Library.

† Excluding volumes formed by binding periodicals and pamphlets.

‡ Including both volumes and pamphlets. See p. 218.

The condition and methods of the Ordering Department remain practically the same as in the previous year. The increase of work in this Department has made it necessary to add to its strength by the employment of Mr. George D. Wells, of the Class of 1894.

The Department has the duty not only of ordering and receiving all books bought, but it has the first care of gifts received, which during the past year has involved the handling of nearly 21,000 volumes and pamphlets. In the expenditure of so large a sum divided by appropriation into over fifty different separate accounts, care, exactness and good judgment in making estimates are required, in order to keep everything well in hand. Experience, however, and the long conduct of the department by the same head have made it possible to keep the estimates very close to the actual conditions. It is interesting to notice that at the beginning of the year, the estimate of outstanding orders, including continued works, periodicals, etc., was \$11,666. Orders were forwarded during the year chargeable to Library funds, estimated at \$12,387, of which it was expected that three-fourths might be received during the year. Three-fourths of this sum, or \$9,300, added to the liabilities at the beginning of the year, gives \$20,966, a sum closely approximating the actual expenditure, or \$20,470.

#### THE ARCHIVES AND THE HARVARD COLLECTION.

Mr. P. H. Tufts has continued in charge of the Archives and the collection of printed matter relating to the University, but work has been reduced for the present on these two collections to its lowest limits, and we have not attempted to do more than to keep in order the accessions currently received and prevent the work from falling seriously behind.

WILLIAM COOLIDGE LANE,  
*Librarian.*

## THE GRAY HERBARIUM.

TO THE PRESIDENT OF THE UNIVERSITY: —

SIR, — During the academic year 1901–02 the only changes in the personnel of the Herbarium staff have been the reappointment of Dr. Jesse More Greenman as assistant after an absence of two years for foreign study, and the temporary employment of Mr. John Robert Johnston as assistant from July to September, 1902.

The accessions to the Herbarium during the year have been numerous and valuable. The following from their size, rarity, or unusual source, merit particular mention. (1) Received by gift or exchange: from the Royal Botanical Museum in Berlin, 310 specimens from British Guiana, Colombia, and Mexico, also 82 specimens of types of tropical American *Compositae*, chiefly of the large and difficult genus *Senecio*, received through Dr. J. M. Greenman; from Professor Franz Buchenau of Bremen, 152 of the rarer European species from the Baenitz Herbarium; from the late Marc Micheli of Geneva, 114 plants of southern Mexico and Colombia collected by Langlassé; from Mr. O. D. Allen, 626 plants of the Cascade Mountains; from Professor C. Conzatti, 132 plants of Oaxaca, Mexico; from Judge J. R. Churchill, 50 plants from Prince Edward Island; from the late Charles P. Loring, 600 plants chiefly from the north shore of Lake Superior; from Professor H. Pittier de Fabrega, 51 plants from Cocos Island of the Pacific and 58 plants of Costa Rica; from the Royal Botanical Garden at Sibpur, 40 grasses of Bengal, also a second collection of 51 specimens of similar character received through Professor C. S. Sargent; from Mr. C. H. Bissell, 580 plants of Connecticut; from Professor Conway MacMillan of the University of Minnesota, 72 mosses (transferred to the Cryptogamic Herbarium); from Professor A. Nelson of the University of Wyoming, 812 plants of Wyoming; from Dr. J. M. Greenman, 849 plants of Europe; from Professor L. H. Pammel, 203 plants of Iowa; from Mrs. J. M. Spencer, 213 plants, chiefly of southern Europe; from the Geological Survey Department of Canada, 160 plants of British North America. (2) Obtained by purchase: from Mr. E. S. Steele, 229 plants from Stony Man Mountain, and 517 plants from Washington; from Mr. C. F. Baker, 849 plants of Colorado and 168 of California; from Mr. R. M. Harper, 416 plants of Georgia; from

Mr. A. A. Heller, 1019 plants of Pennsylvania and 413 plants from California; from Mr. A. M. Brenes, 235 plants from Costa Rica; from Mr. F. E. Clements, 546 plants of Colorado; from Mr. A. H. Curtiss, 192 plants of Florida and Georgia; from Messrs. O. O. Miller and J. R. Johnston, 274 plants of Margarita Island near Trinidad; from Messrs. Rosendahl and Brand, 100 plants of Vancouver Island; from Mrs. Blanche Trask, 85 plants of San Nicolas Island. (3) Obtained through collections made by the staff: 467 plants from Mexico collected by Mr. C. G. Pringle; 350 plants of Berkshire County, Massachusetts, collected by Miss M. A. Day; 3500 plants of northern Maine and the Maritime Provinces collected by Mr. M. L. Fernald; 6200 plants of New England collected for exchanges by Messrs. Fernald, Robinson, and others.

From all sources 24,557 specimens of dried plants have been received, and during the year 15,608 sheets of mounted and classified specimens have been added to the organized collection of the Gray Herbarium. This is again the largest annual addition ever made. The accessions to the Library of the Gray Herbarium have been 203 volumes and 244 pamphlets. The Library at present contains 14,142 books and pamphlets.

The pressing need of more case room in the Herbarium has been temporarily met by the purchase of sixteen new plant cases. These have been planned with much care and constructed at considerable expense to be both fire-proof and air-tight. The only space available for these new cases had to be taken from the already cramped working room of the staff, which is now seriously hampered in its activities by insufficient space for sorting and imperfect light for plant dissection and microscopic work. The staff and friends of the Gray Herbarium have long been apprehensive of danger to the collection from fire, for the building, once considered fire-proof, cannot be so regarded now. The floors and most of the cases are of unprotected wood, the rafters in an air space over the main room are also of wood, and finally the building is flanked on one side by a wooden dwelling house and on the other by a laboratory.

The present building has served the Herbarium for nearly forty years, a period during which the collection and library have about trebled their size. It is now overcrowded and all plans for enlarging or satisfactory remodelling the present structure have been found from the form and imperfect fire construction of the building to be impracticable. Therefore the need of a new and thoroughly fire-proof herbarium building is keenly felt, and it is to be hoped that the gift of such a building, furnishing adequate, safe, permanent

quarters for the Gray Herbarium, will appeal to some friend of the University. Such a building would be placed near the University Museum where the Corporation has agreed to provide a desirable site.

For many years no formal instruction has been given at the Gray Herbarium, but as the members of the staff have been frequently called upon to aid advanced students engaged in systematic problems, it has been thought best to organize and correlate this hitherto informal work by the announcement of two regular courses in systematic botany. One of these, to be conducted by Mr. Fernald, is known as Botany 7 and treats of the local flora of New England and the Maritime Provinces of Canada; the other course, known as Botany 20c and conducted by the Curator, is devoted to research on taxonomic problems.

Work upon the *Plantae Exsiccatæ Grayanae*, a large series of critically identified specimens for exchange, as mentioned in the last report, has been continued. One hundred specimens of each number are collected and completed sets of the first "century," together including 10,000 specimens, were ready for distribution in August. In the collection and preparation of these sets, which are to be used largely for foreign exchanges, several friends of the Gray Herbarium have taken much interest and rendered valuable and gratuitous assistance.

Once more the Gray Herbarium, with an income much smaller than its necessary expenses, has been able to complete the academic year without deficit. This has again been accomplished through the warm interest and liberality of the Visiting Committee and the ready generosity of more than one hundred and fifty donors whose prompt gifts for present use are enumerated in the report of the Treasurer.

During the year the members of the staff have published 28 scientific papers and minor articles of which the following are the more important.

*Scirpus supinus* and its North American allies. By M. L. FERNALD, *Rhodora*, iii, 249-252.

The North American *Euphrasias*. By B. L. ROBINSON, *Rhodora*, iii, 270-276.

The true *Lycopodium complanatum* and its common American representative. By M. L. FERNALD, *Rhodora*, iii, 278-281.

Outlines of Botany for the High School Laboratory and Class-room. By R. G. LEAVITT; 8vo, with 272 pages and 384 text figures (American Book Co., New York).

The same issued with L. H. Bailey's revision of Gray's Field, Forest and Garden Botany (American Book Co.).

The New England *Polygonums* of the section *Aviculariu*. By B. L. ROBINSON, *Rhodora*, iv, 65-73, with plate.

The Chilian *Empetrum* in New England. By M. L. FERNALD, *Rhodora*, iv, 147-151.

Contributions from the Gray Herbarium, n. s., No. xxii. By M. L. FERNALD, *Proc. Am. Acad.* xxxvii, 447-514, plates i-v; including I. The Northeastern *Carices* of the Section *Hyparrhenae*; II. The variation of some boreal *Carices*.

Some little known plants from Florida and Georgia. By M. L. FERNALD, *Bot. Gaz.* xxxiii, 154-157.

Contributions from the Gray Herbarium, n. s., No. xxiii. By M. L. FERNALD, *Am. Jour. Sci.*, ser. 4, xiv, 167-194, plates v, vi.

B. L. ROBINSON, *Curator*.

## THE BOTANIC GARDEN.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR, — As Director of the Botanic Garden, I have the honor to submit my report for the year 1901–02.

Mr. Cameron, Head-Gardener, has given me the following statement relative to the weather during the twelve months closing July 31:—

“During the autumn of 1901 the weather was good and much transplanting was done amongst our herbaceous plants and shrubbery. The winter was not severe and an exceptionally small number of plants were injured or lost. The early part of summer was very hard on vegetation on account of the drouth which prevailed then, and it was feared that many plants would be lost, but later in the summer we had an ample supply of rain which saved the plants. Nevertheless some of the trees showed the effect of the drouth during the entire season.”

In the Spring, under the care of the Assistant-Director, Mr. Ames, the water-plants in the central pond were replaced by young specimens of very attractive appearance. The great favor with which this improvement was received by our visitors has completely justified the outlay.

Throughout the Garden slight changes for the better were made, but none of a radical character. The special plots devoted to the Virgilian and Shakespearean plants were renovated in part, but not materially changed. These and the plots devoted to old-fashioned plants appear to be interesting to a good many people who do not care at all for the beds in which the different natural orders are displayed. It is likely that the former classes of exhibits may be further extended the coming year.

Our Garden is essentially herbaceous. In order not to shade the herbaceous plants too much, we have to sacrifice, at frequent intervals, our vigorous shrubs and quickly-growing trees. We depend chiefly upon the Arnold Arboretum, although it is inconveniently remote, for illustrations of arboreous and arborescent vegetation. It does not seem wise to attempt to cultivate in our scanty area any of the trees and shrubs which can be shown to better advantage in another part of the University grounds. But we think that it



would be undesirable to remove any of the trees of large size, which now adorn our grounds as survivals of the earliest days of the Garden, even if they do in a measure shade some of our plots. For the present, therefore, we shall retain these fine specimens which are recorded in Professor Peck's first "Catalogue of the plants of the Botanic Garden."

The Greenhouses have been kept in good condition all the year. The Memorial range, with its attached Laboratory, has been of much service, and is likely to afford better and better facilities for the investigation of certain interesting questions in Plant Physiology. The generous founder of this Memorial building retains a lively interest in its welfare. During the year, the Memorial Laboratory has been under the charge of Mr. Amon B. Plowman, who has made use of the appliances there for the examination of problems connected with the relations of electricity to vegetation. Some of his results have been published in the American Journal of Science.

The system of watering the Garden has been completely changed during the year. Two new mains have been brought in from Raymond Street, and pipes are now carried to convenient distributing points below the terrace. This costly enterprise has already shown itself to be justified by the diminution in the amount of labor demanded. The wages saved by this improvement will pay for the entire remodeling of the system in about six years.

We have again relabelled the plants of the Garden. No task connected with the care of a garden is more necessary or more thankless than the labelling. The displacement of labels by too inquisitive visitors and by the carelessness of the laborers renders it impossible to keep all of the smaller plants accurately named. Moreover, there is no way yet devised by which low-priced labels can be made permanent. Those which we are now employing are simple and legible, and are thought to be good for about five years.

The Garden now supplies all of the specimens which are needed by our classes in Elementary and Advanced Botany, the plan of raising such material on our own grounds having worked well. There is annually a saving of about two hundred and fifty dollars over the plan formerly in vogue. The present plan is much more convenient in its working, and avoids the difficulty of supplying specimens from a distance early on Monday morning.

The Experimental Garden in Cuba has received large accessions of useful plants from various sources during the year. Fine specimens of desirable sorts of sugar-cane have been sent us from Barbadoes and from Java, which, with the varieties previously brought to the

Garden, give us no less than fifteen approved kinds for our own experiments in crossing. Large numbers of other species of plants have been added of late. The inspection of the Garden made by Mr. Ames shows that the work conducted by the superintendent, Mr. Bohnhof, has been careful and skilful. At the present time, Mr. C. G. Pringle, Botanical Collector of the University, is in Mexico, collecting plants for experimental purposes at the new Cuban station. Since it is believed to be advantageous to employ in crossing plants those varieties which are farthest removed from each other, we expect to derive great benefit from our Mexican stock. Mr. Pringle is to conduct the work in crossing plants during January and February.

At the Laboratory at North Easton, which Mr. Ames generously opens to our students, investigations have been prosecuted by Mr. R. G. Leavitt, especially upon the morphology of certain roots, and the results, in part, have been published.

Considerable accessions have been made to all parts of the Botanical Museum during the year. The Ware Collection has been enlarged by a few new models. The popular interest in this collection increases year by year. The endeavor has constantly been made to increase this interest by certain modifications in the arrangement and in the labelling. Part of the latter work has been done in an excellent manner by Dr. J. M. Greenman, of the Gray Herbarium. It is now proposed to issue a printed list of all these determinations, together with such explanatory text as may serve to make it a handy guide for the use of visitors. Mr. Blaschka's latest models are among the finest yet made by him, and they represent an amazing amount of artistic labor. At present, the Ware Collection contains nearly seven hundred entire specimens, with above three thousand details.

The Economic Museum continues to grow symmetrically. It has discarded a large number of specimens in favor of better ones within the year, a work which would have been impossible without the generous help of an anonymous friend.

In the care of the specimens the Director of the Garden has received great help from Mr. F. L. Sargent, who now serves as private Museum Assistant in this Department. Mr. Sargent has long taken an intelligent interest in Economic Botany, and therefore his work is very valuable. He has lately been engaged in a revision of our large collection of fibres. Mr. B. H. A. Groth, serving also as a private Museum Assistant, is now preparing standard and type microscopic specimens of all the fibres in our collection.

Dr. R. T. Jackson reports that during the year most satisfactory advance has been made in the arrangement and labelling of the collection of fossil plants. This is largely due to the energy and ability in handling collections of Mr. J. A. Cushman, who has assisted in the work.

While it was known that the collection is rich in published material, the number of such specimens has exceeded expectations. There are 855 specimens which have been used in publication. Something over half of these are types, or specimens on which descriptions of new species have been based. The remainder are figured, or otherwise published in monographs or smaller papers of the late Leo Lesquereux or other authors. Of the published specimens 308 are carboniferous plants, the remainder being from various formations, but largely cretaceous. Further work will doubtless reveal more of such published material. The cataloguing of the collection has progressed well, and 2,896 lots of one or more specimens have been catalogued. In addition to being entered in the general catalogue, a card catalogue, arranged alphabetically, is being made out for all published material.

A collection of 110 choice specimens of carboniferous plants from Missouri has been received from Dr. J. H. Britts in exchange for Museum publications.

Among the gifts received during the year the following should have special mention :—

From the late H. H. Hunnewell, the sum of twelve thousand dollars, towards repaying advances made by the Corporation to the Botanical Department.

From an anonymous donor, the sum of five thousand dollars, towards repaying the advances made by the Corporation to the Botanical Department.

From an anonymous donor, the sum of one thousand dollars, towards the purchase of material for the Museum.

From Professor J. W. Blankinship, Ph.D. Harvard 1900, a large collection of grains from the vicinity of Bozeman, Montana, the seat of Montana State University.

From Dr. George G. Kennedy, a microscope stand and other appliances much needed to supplement those now in use for research.

The death of H. H. Hunnewell, of Wellesley, removes from the Garden Committee its most active and helpful counsellor. For more than thirty years Mr. Hunnewell has been a generous benefactor to many departments of the University, and especially to the Botanical Department. He was the giver of the Laboratory and Lecture-room,

and the attached Greenhouse, erected at the Garden in 1870, and he joined with the late F. L. Ames in reconstructing, at considerable expense, the range of Greenhouses on the lower level. He also united with Mr. Ames in aiding to equip our laboratories in 1890, and, throughout all these years, added freely to our scanty resources for the general purposes of the Garden and Museum. His last great gift was accompanied by a generous expression of his pleasure at being able to contribute to the Botanical establishment. The advice given by Mr. Hunnewell in the management of the affairs of the Garden was always much appreciated, because it was based on his wide experience. Although his large means permitted him to conduct his own horticultural enterprises on a very large scale, he never seemed to be weary of showing us how to make our small means go as far as possible.

At the present time, the principal need of the Garden is an adequate fund. Our invested funds are not sufficient to meet even the ordinary, unavoidable expenses of the establishment, and when, as in this time of scarcity of coal, our modest expenses are increased about twenty per cent., the outlook is discouraging. Every year it has been found necessary to ask the friends of the Garden to aid in making up the deficiency: this year, it will be absolutely necessary to ask for more than usual. It is not pleasant to make these yearly solicitations, but, until the invested funds are largely augmented by gift, this task of soliciting small amounts to meet the annual deficit is one which we cannot avoid.

GEORGE LINCOLN GOODALE, *Director.*

## THE ARNOLD ARBORETUM.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—I have the honor to submit the following report of the progress and condition of the Arnold Arboretum during the year ending July 31st, 1902.

The ground occupied by the Tulip-trees, Lindens, Horse-chestnuts, Ashes, Catalpas, and Elms has been plowed, graded and laid down permanently in grass. The work of grading the surface, which has been carried on gradually for several years, is now finished in the original Arboretum. An additional mile of grass walk has been made during the year, and all the principal collections can now be conveniently reached by these paths, which are useful for students and attractive to the general public. The heavy and expensive work of construction is now finished, and the care and improvement of the collections, which constantly require attention and often renewal, and the introduction of newly discovered plants will more than exhaust the income of the present inadequate Arboretum Endowment.

The exchange of plants and seeds with other botanical and horticultural establishments has been continued during the year. 10,952 plants (including cuttings and grafts) and 1,753 packets of seeds have been distributed as follows: To the United States, 10,648 plants and 446 packets of seeds; to Canada, 32 packets of seeds; to Great Britain, 304 plants and 179 packets of seeds; to the continent of Europe, 995 packets of seeds; to Japan, 97 packets of seeds; to Java, 4 packets of seeds. There have been received during the year 3,611 plants (including cuttings and grafts) and 548 packets of seeds.

During the year 6,893 sheets of dried plants have been added to the herbarium and 207 sheets have been distributed to other establishments.

The library has received by gift 690 bound volumes and 293 pamphlets.

During the summer four of the superintendents of the Metropolitan Park System passed several weeks at the Arboretum studying and practicing the art of pruning and the general care of trees. Students of landscape-gardening from the Institute of Technology have re-

ceived instruction at the Arboretum during the spring and autumn months from Mr. Jack; and the Arboretum appears to be much frequented by students at the Bussey Institution.

Several years ago Mr. Morris K. Jesup, the President of the American Museum of Natural History, presented to the Arboretum wood specimens of nearly every North American tree. These specimens, which are half sections of trunks and fourteen inches long, show the bark and on a horizontal plane the polished and the natural wood. These specimens were cut from the larger specimens which form the Jesup Collection of North American Woods, the gift of Mr. Jesup to the American Museum of Natural History and brought together and arranged by me during the last twenty-two years. Want of sufficient means to display properly Mr. Jesup's gift made it necessary to store temporarily this collection, but during the past year Mr. Jesup has furnished, at a cost of \$2800, one of the exhibition halls in the Museum Building with glass cases, and this hall is now devoted to the display of this important collection. Each specimen is accompanied by a label  $12\frac{3}{4}$  inches long and 7 inches high. One half of this label consists of a map of North America; on this the area over which the particular tree grows spontaneously is colored green; on the other half of the label is printed a popular description of the tree, with the strength, weight and uses of its wood. These labels are duplicates of the labels made originally for the Jesup Collection and give in a condensed form much useful information.

At his own expense, Mr. George R. Shaw has improved the Museum building by fire-proofing the attic ceiling and laying a hardwood floor in the attic.

During the year two supplementary volumes of *The Silva of North America*, made necessary by the discoveries of the last twelve years, have been finished and will be published in December. These volumes complete the book. Planned some years earlier, work on this *Silva* was really begun in 1879, when I undertook to prepare for the General Government an account of the trees and forests of the United States for one of the final reports of the 10th Census. The first volume appeared in October, 1890, and the twelfth in January, 1899, while nearly three years have been needed to complete the two final volumes, which are chiefly devoted to the description of trees whose existence was not even suspected when the plan of the work was first made. The preparation of this book has made necessary the accumulation of a library of more than 9,000 volumes and a large Herbarium, both now the property of the University, and

innumerable journeys extending to all parts of this country, to Japan, and to the important museums and libraries of Europe.

During the year the first part of an illustrated work on Trees and Shrubs, intended chiefly to make known the new or rare plants of the Arboretum and other undescribed woody plants from different parts of the world, has been finished with the coöperation of my associates and of the botanists of the Gray Herbarium and will appear in December. It is proposed to issue this work in parts of twenty-five plates at irregular intervals and as often as interesting material is found for it.

Work on the Bradley bibliography of dendrological literature has progressed steadily during the year, and 46,000 cards are now ready for the printer.

My thanks are again due to the Trustees of the Massachusetts Society for the Promotion of Agriculture for their annual grant of \$2,500 to be used in increasing the knowledge of trees, and to the members of the Visiting Committee for their support and assistance.

C. S. SARGENT, *Director.*

## THE CHEMICAL LABORATORY.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—Just before the opening of the year Dr. Torrey, after nine years of service as instructor in the course in General Chemistry (Chemistry *B*), resigned, to the great regret of his colleagues, in order to devote himself to technical work; and Mr. O. F. Black, who for five years had been an assistant in the laboratory work of the course, took full charge of the instruction. From the last week in March until the close of the year, during the absence of Professor Sanger in Europe, Mr. E. A. Dunlap gave the instruction in Quantitative Analysis (Chemistry 4), while Mr. M. L. McCarthy took charge of the course in Qualitative Analysis (Chemistry 3). During the second half-year Dr. G. N. Lewis gave the lectures in Electrochemistry (Chemistry 7<sup>a</sup>). No changes were made in the courses of instruction offered for the year.

The number of students in the several laboratory courses during the year and in June, 1901, was as follows:—

	October, 1901.	January 1st, 1902.	June 1st, 1902.	June 1st, 1901.
Chemistry <i>B</i> . . . . .	50	48	46	58
Chemistry 1 . . . . .	353	342	325	278
Chemistry 3 . . . . .	132	127	120	122
Chemistry 4 . . . . .	34	29	25	37
Chemistry 5 . . . . .	29	27	25	29
Chemistry 6 . . . . .	16	16	16	14
Chemistry 9 . . . . .	15	15	..	..
Chemistry 10 . . . . .	..	..	21	16
Chemistry 20 <i>a</i> . . . . .	4	4	4	2
Chemistry 20 <i>b</i> . . . . .	6	6	6	5
Chemistry 20 <i>c</i> . . . . .	3	3	3	2
Chemistry 20 <i>d</i> . . . . .	6	6	6	3
Chemistry 20 <i>e</i> . . . . .	5	5	5	4
Special . . . . .	1	1	1	1
Total . . . . .	654	629	603	571

The number of students in the more elementary courses, General Chemistry (Chemistry *B*), Descriptive Chemistry (Chemistry 1), and Qualitative Analysis (Chemistry 3), was decidedly larger than in the previous year. There were fifty-three unsuccessful applicants for desks in these courses, seventeen of whom ultimately withdrew their



applications. Desks were vacated more slowly than usual, and the thirty-six students who were waiting for places were consequently put to great inconvenience. At the opening of the second half-year there were still fifteen men who had as yet been able to do no laboratory work, seven of whom were students of the Lawrence Scientific School in regular standing. Of the last two applicants on the waiting list one was assigned a desk on March 12th, and the second withdrew his application on March 17th.

The following investigations were carried on during the year under the direction of Professor Jackson: Mr. R. B. Earle continued his work on the nitroquinol colors, and succeeded in proving that they had the quinoid and not the nitro-ester acid constitution; he also studied the dinitrobenzolsulphonic acid of Sachse, and showed that it had the symmetrical structure; Mr. H. C. Porter studied the action of aniline upon tetrabrom-o-quinone; Mr. A. H. Fiske brought to a conclusion his investigation of the nitro derivatives of *v*-tribrombenzol; Mr. H. A. Carlton isolated the *a*-tetrachlordinitrobenzol and studied certain of its derivatives; Mr. E. B. Alvord investigated several bodies derived from triiodbenzol, and Mr. D. F. Calhane studied the action of bromine upon certain aromatic dianines.

Professor Sanger continued with Mr. M. L. McCarthy the study of the products formed by the action of fuming sulphuric acid upon silicon tetrachloride; under his direction Mr. E. A. Dunlap prepared pure cuprous oxide by heating cupric oxide *in vacuo*, studied its behavior with argentic nitrate, and improved the method of Hampe for the determination of cuprous oxide in the presence of metallic copper; Mr. J. A. Gibson found that the well known retention of antimony in the Marsh generator depends upon the concentration of the solution, and that practically all the antimony is evolved as hydride from dilute solution.

The following investigations were made under the direction of Professor Richards: Mr. E. H. Archibald finished his determinations of the atomic weight of caesium, and found the value 132.88 from analyses of the chloride, bromide, and nitrate; Mr. G. E. Behr, Jr., studied the effect of pressure upon the solution tension and specific gravity of pure iron; Mr. F. Bonnet, Jr., contributed several new facts concerning the violet and green salts of chromium which throw light upon their nature; Mr. F. R. Fraprie studied the effect of pressure upon growing crystals, and investigated two new salts of caesium; Mr. W. S. Hutchinson continued the investigation of the atomic weight of calcium; Mr. K. L. Mark constructed new apparatus for determining the coefficient of expansion of gases under

constant pressure; Mr. S. K. Singer carried out a new method for the determination of chloride in the presence of cyanide, and continued the study of the reaction of chlorides upon calomel; Mr. W. N. Stull studied the nature and speed of the reaction of bromine upon oxalic acid, made some very precise experiments showing the universally exact application of Faraday's law, and studied the properties of two forms of argentic chloride with reference to volume and internal energy; Mr. R. C. Wells made a very thorough study of the transition temperature of crystallized sodic bromide.

Dr. G. N. Lewis devised a modification of Bunsen's calorimeter which is adapted to experiments with large quantities of material.

Professor Hill continued with Mr. W. J. Hale the study of nitromalonic aldehyde and certain of its derivatives; under his direction Mr. O. F. Black made a further study of the product formed by the action of potassic nitrite upon ethyl mucobromate; Mr. F. W. Russe investigated the separation of the optically active components of the racemic  $\beta$ -dihydrofurfuran- $\alpha\alpha'$ -dicarboxylic acid; Mr. C. S. Walker studied a new method for the determination of nitrous acid and compared its accuracy with that obtainable by the older methods.

The following papers were published during the year:—

1. Modifications of Hempel's Gas Apparatus. By T. W. RICHARDS. *Proc. Am. Acad.*, xxxvii, 273; *Zeitschr. anorg. Chem.*, xxix, 359.
2. The Decomposition of Mercurous Chloride by Dissolved Chlorides: a Contribution to the Study of Concentrated Solutions. By T. W. RICHARDS and E. H. ARCHIBALD. *Proc. Am. Acad.*, xxxvii, 347; *Zeitschr. phys. Chem.*, xl, 385.
3. A new Investigation concerning the Atomic Weight of Uranium. By T. W. RICHARDS and B. S. MERIGOLD. *Proc. Am. Acad.*, xxxvii, 365; *Zeitschr. anorg. Chem.*, xxxi, 235.
4. The Significance of Changing Atomic Volume. II. The probable Source of the Heat of Chemical Combination, and a new Atomic Hypothesis. By T. W. RICHARDS. *Proc. Am. Acad.*, xxxvii, 399; *Zeitschr. phys. Chem.*, xl, 587.
5. On  $\delta$ -Nitropyromucic Acid. By HENRY B. HILL and GEORGE R. WHITE. *Am. Chem. Journ.*, xxvii, 193.
6. The Quantitative Separation of Hydrochloric and Hydrocyanic Acids. By T. W. RICHARDS and S. K. SINGER. *Am. Chem. Journ.*, xxvii, 205.
7. On the Accuracy of the Improved Voltmeter. By T. W. RICHARDS and G. W. HEIMROD. *Proc. Am. Acad.*, xxxvii, 415; *Zeitschr. phys. Chem.*, xli, 302.
8. A Table of Atomic Weights. By T. W. RICHARDS. *Proc. Am. Acad.*, xxxvii, 600.

9. Ueber einige Derivate des 3.4.5-Tribromnitrobenzols. By C. L. JACKSON and A. H. FISKE. *Ber. d. deutsch. chem. Ges.*, xxxv, 1130.
10. A Redetermination of the Atomic Weight of Calcium. Preliminary Paper. By T. W. RICHARDS. *Am. Chem. Soc.*, xxiv, 375; *Zeitschr. anorg. Chem.*, xxxi, 271.
11. Note on the Application of the Phase Rule to the Fusing-Points of Copper, Silver and Gold. By T. W. RICHARDS. *Am. J. Sc.*, xliii, 377.
12. Concerning Gas Analysis by Measurement in Constant Volume under Changing Pressure. By T. W. RICHARDS. *Proc. Am. Acad.*, xxxviii, 273.
13. The Significance of Changing Atomic Volume. III. The Relation of Changing Heat Capacity to Change of Free Energy, Heat of Reaction, Change of Volume and Chemical Affinity. By T. W. RICHARDS. *Proc. Am. Acad.*, xxxviii, 293; *Zeitschr. phys. Chem.*, xlii, 129.
14. The Speed and Nature of the Reaction of Bromine on Oxalic Acid. By T. W. RICHARDS and W. N. STULL. *Proc. Am. Acad.*, xxxviii, 319; *Zeitschr. phys. Chem.*, xli, 544.
15. Ueber 2.6-Dibrom-p-phenylendiimin. By C. L. JACKSON and D. F. CALHANE. *Ber. d. deutsch. chem. Ges.*, xxxv, 2495.

Professor Richards also gave an address upon the Determination of Atomic Weights, before the New England Association of the Teachers of Chemistry, which appeared in the Report of the April meeting of the Association.

The Laboratory is under great obligation to Dr. Wolcott Gibbs for generous gifts, during the year, of chemicals, instruments, and apparatus; the collection of chemicals is especially rich in preparations of the rare earths and metals, and all material is to be used primarily to advance research.

The experience of two successive years had shown that additional facilities for laboratory work must in some way be provided for students in the elementary courses. It was evident that any addition to Boylston Hall which involved the reconstruction of a considerable part of the outer wall would be costly and would necessitate the remodelling of certain rooms in the old building. A more economical plan seemed to be the erection of an independent structure sufficiently near to be readily accessible, but of such dimensions as to interfere in no way with the laboratories now in use. A one-story building was accordingly erected during the summer directly south of Boylston Hall, connected by a covered passage-way with the basement of the main building. The new laboratory is light and airy and is fitted with desks for 260 students working in two divisions. We shall be able to accommodate all students who wish to enter our elementary courses for several years to come; but our growth in the past ten

years warrants the conclusion that these elementary courses will again have outgrown their quarters before another ten years have passed, while the more advanced courses will seriously suffer from lack of room at a still earlier date. Certain alterations in the basement of Boylston Hall were made necessary by the building of the new laboratory, and we have been able at the same time to arrange more conveniently the rooms used for general purposes. A small room in the southeast corner, which had long been used for storage, seemed to be available for chemical work. The material which it contained was removed to a new store-room built in the dark north-east corner, the windows were enlarged, an asphalt floor was laid, and the room was fitted up as a laboratory for special work upon gases under the direction of Professor Richards. A five horse power electric motor and an apparatus for liquefying air will give the necessary control of pressure and temperature.

HENRY B. HILL, *Director.*

## THE JEFFERSON PHYSICAL LABORATORY.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR, — The increase in the number of students electing the courses in Physics has necessitated the arrangement of new working rooms in the Laboratory. The upper floor of the space devoted to the physical cabinets has, therefore, been fitted for Professor Sabine's elective courses; and the laboratory space occupied formerly by his students has thus been increased more than a third. It is probable that, with the growth of the Physical Department, more of the space now devoted to historical and antiquated apparatus will be utilized for laboratory purposes. With this development in mind, the more interesting pieces of historical apparatus, such as the Benjamin Franklin machines, the Orreries, the first types of dynamos, have been placed together in a room open to visitors on the first floor of the building. The present policy of the Department is to add to the physical cabinets only when need, and experience in the use of apparatus show whether new additions will possess a sufficient length of life to make the instruments desirable from the point of view of an economical investment. The growth, therefore, of the physical cabinets in the future promises to be a very small one; for the new apparatus enters instantly into everyday use in the special work rooms of the Laboratory.

Professor Sabine's course, *Physics C*, has attracted a large number of interested and enthusiastic students. The sections number from forty to fifty students; and the men work systematically and conscientiously upon experiments which are well calculated to train definiteness and accuracy of thought.

Much thought has been devoted during the past year to the improvement of the mechanical equipment of the Laboratory; for success in modern Physical investigation depends largely upon refined machinery. It was found that the shafting in the machine shop was consuming too much power; accordingly individual electrical motors were employed. The main shaft was cut in two, and the halves were run by separate motors. By this change only those machines which are in immediate use are driven. This change resulted in reducing the cost of power more than one-half. The Laboratory is thus in step with the general introduction of individual motors in the best arranged manufacturing establishments throughout the United States.

Mr. Hogg, a graduate student of the University of Toronto, has completed during the past year an investigation on the viscosity of air at atmospheric pressure, using a new method due to Sir George Stokes. Mr. Hogg is continuing this investigation, extending the inquiry to gases at a low pressure.

Dr. G. W. Pierce is continuing his study of the energy given out by the X-rays.

Professor Sabine has shown the general applicability of his methods of predetermining the reverberative effect in lecture halls; and is studying methods of arriving at greater precision in the determination of musical intervals. He has also shown that his new instrument for the measurement of color sensations is applicable to a more scientific study of chromatics than has been hitherto possible.

Professor Hall has made an exhaustive examination of the question whether a body falling freely under the action of gravitation strikes the earth to the south of the indication of the plummet. He is continuing his investigation of this much mooted question.

The Director has continued his study of gases subjected to high temperatures; and has found interesting new phenomena which have a bearing upon sudden changes of temperature observed upon the sun. By the use of quartz tubes he has been enabled to extend greatly his inquiry into the comparatively little explored field of the ultra violet.

The Coolidge fund for original research has given a great impetus to scientific investigation in the Laboratory. There are now ten men (assistants and graduate students) engaged upon researches which may, from their extended and difficult nature, demand one or more years for their completion.

JOHN TROWBRIDGE, *Director.*

## THE DIVISION OF ENGINEERING.

TO THE PRESIDENT OF THE UNIVERSITY: —

SIR, — I respectfully call your attention to the work of the Division of Engineering for the year 1901-02. Heretofore no yearly report has been submitted, as from other departments having laboratories. During the past twelve years the Division has grown from the smallest into the largest of those with laboratories in the University, and it is now the third in size of all the divisions under the Faculty of Arts and Sciences. Its instruction is mainly for undergraduates, who enter the Scientific School on an examination which next year will be equal to that for entrance to the College. The instruction is given in forty-three courses, — thirteen of which continue through the year, twenty-three through one half-year, and seven through from five to eleven weeks in the summer. There were in 1901-02 one professor, five assistant professors, and eighteen instructors and assistants; but the Division was undermanned. For the purpose of demonstrating this fact, the following tables have been prepared, one from the report of the President for 1900-01 and the other from the records of last year. The departments selected for comparison are those having laboratory courses, and the courses of study are all reduced to full-course enrolments, the total number enrolled in full courses having been added to one half the number enrolled in half courses.

It appears from these tables that the relative standing of the officers of the Division is decidedly inferior to that of other departments, and that each instructor has too many students in his course for effective work. There is no large lecture course to bring up the average, as the instruction is necessarily mainly by recitations and laboratory exercises. Under these conditions it has been impossible to improve the standing of the school in graduate studies, or to give the instructors the necessary time for research along the lines of their specialties. The appointment of an additional professor of electrical engineering, which took effect September 1, 1902, will lighten the burden in that branch of the subject, but more remains to be done. Some idea of the relative position occupied by the Division may be

## I.

1900-01.	Full-course enrolments.	Number of courses.	Number of professors and assistant professors.	Number of instructors and assistants.	Total number of teachers.	Average number of students per course.	Average number of students per professor.	Average number of students per teacher.
Engineering . . . . .	1216	27	5	14	19	45	243	64
Mathematics and Astronomy .	376	24.5	5	5	10	15.3	75	37.6
Physics . . . . .	336	11.5	3	5	8	29.2	112	42
Chemistry . . . . .	662.5	13.5	4	19	23	49.1	165	28.8
Geology . . . . .	707	25.5	6	11	17	27.7	118	41.6

## II.

1901-02.								
Engineering . . . . .	1270	28	6	18	24	45.4	211.6	52.9
Mathematics and Astronomy .	398	21	5	5	10	18.9	79.6	39.8
Physics . . . . .	345.5	9	4	6	10	38.4	86.4	34.5
Chemistry . . . . .	675	13.5	4	17	21	50	168.8	32.1
Geology . . . . .	794	27.5	8	8	16	28.9	99.3	49.6

gathered from the total number of full-course enrolments in the several Divisions. For the past year the numbers have been:—

	Enrolments.	Courses.
Modern Languages (including English), . . . . .	4,004	72
History and Political Science, . . . . .	2,938	43.5
Engineering, . . . . .	1,270	28
Philosophy, . . . . .	966	22.5
Geology, . . . . .	794	27.5
Fine Arts, . . . . .	780.5	18.5
Ancient Languages, . . . . .	708.5	34
Chemistry, . . . . .	675	13.5
Mathematics, . . . . .	398	21
Physics, . . . . .	345.5	9
Biology, . . . . .	282	12.5
American Archaeology and Ethnology, . . . . .	197.5	5.5
Music, . . . . .	94.5	7
Semitic Languages and History, . . . . .	53	9.5

On the material side the opportunities for instruction in engineering have improved greatly during the past two years. The new building, erected from money bequeathed to the University by Henry L. Pierce, has been occupied since the middle of October, 1901, and



the laboratories have been moved out of the old gymnasium and the basement of the Lawrence building. Instruction can now be given to much better advantage, but the need of further equipment — such as instruments, machinery, and furniture — is very urgent. One drafting-room is now well furnished. The others have been fitted up with the old desks used formerly in the Lawrence building. Most of these desks were made for small drawing-boards, and are no longer suitable. In the laboratories there has been a constant increase of students, and the number next year will probably be not less than seventy-five in each laboratory. The mechanical provisions for the work are not adequate.

The advanced courses cannot be given satisfactorily without a substantial expenditure on apparatus. It is regarded as extremely desirable that the laboratories should be well equipped for graduate students and for research, as well as for the elementary practical instruction which should go with lectures. There are, roughly speaking, three kinds of practical instruction: first, craft and field work; secondly, experimental and laboratory methods; thirdly, thesis and research.

1. The craft work is in the nature of manual training, intended to familiarize students with workshop methods and with the qualities of materials. It is given during the summer in the Cambridge Manual Training School, and so long as the business arrangements with the city prove satisfactory, no additions to the equipment are needed. A few modern tools would be useful in the repair shop in Pierce Hall, where apparatus is made and repaired for experiments.

The field work, such as surveying and railroad engineering, is all done at the camp on Squam Lake during the summer. This camp is due to the generosity of a Harvard graduate, and it is admirably suited to the purpose. Instruction was given during the summer of 1902 to ninety-two students, about half of whom were undergraduates in the academic department. It is thought that the employment of the summer months in this way is beneficial to the student. It saves the waste of eleven weeks, and by an active outdoor life puts him in the way of beginning the term's work more effectively when College opens.

2. Instruction in the laboratory begins with a course in laboratory methods, which is intended to teach the use and standardization of all instruments for measuring power, so that a student may at least become well acquainted with the ordinary machinery to be found in engineering establishments. The study of materials, — solid, liquid, and gaseous, — together with the methods of testing them, forms a

natural part of the course. The instruction is, broadly speaking, similar to that in advanced physics, excepting that much larger quantities are dealt with and measured. Students are expected to learn applied mechanics from machinery as well as from books, and to obtain enough experience to begin work after graduation. A considerable outlay for apparatus is needed, to take care of the increasing number of students in this course.

3. The last item of the three classes of laboratory work is the most expensive to maintain, namely, research and thesis work. At present no university or technical school provides adequate opportunities for research. Nothing short of a substantial endowment would enable Harvard to do its share, as an annual income that could be counted on with certainty would be necessary. In the near future some work could be done without waiting for an endowment, in case additional machinery and apparatus were provided.

I desire to call your special attention to the present needs of engineering at Harvard. We have now a building well fitted for teaching all branches of the subject, but it is only half equipped. The greater difficulty of the entrance requirements has not checked the growth of the department, and we shall soon be at the end of our resources for handling the large number of students who come to us. The opinion which is at times advanced, that the University should confine itself to the pure sciences, is founded on prejudice, as the line between pure and applied science cannot be drawn. The only possible distinction between the two springs from the attitude of mind of the teacher and the pupil. Researches for the purpose of making improvements in established industries, or of founding new ones, are ordinarily applied science; while investigations made for the pleasure and profit of the race, with no thought of immediate industrial application, are ordinarily pure science, even though they deal exclusively with economic questions. No university can possibly limit its field of work to subjects which are ordinarily classified as pure, and no technical school can succeed with only courses of application in its curriculum. The two kinds of instruction are too closely allied to be separated.

The fact that Harvard may duplicate the plant of other institutions, entirely technical in their nature, has absolutely nothing to do with the case, except that the money for this duplication may sometimes come from the same group of men. As a matter of fact, engineering has not yet taken on the dignity demanded by its position as one of the great professions of America. This is in part due to the notion that the engineer's employment is essentially subordinate

to that of the business organizer, financier, or manager. It will necessarily remain so, unless the engineer himself is educated in such a way as to make him a business man, and to give him the control of the business side of engineering operations. One of the best examples of the advantages of following this plan may be seen in the management of the Pennsylvania Railroad, almost all of whose leading men have come up through engineering. There are two ways in which the University can be of real service to the profession of engineering: one is to educate young men destined for it in contact with the broad spirit which prevails here at Cambridge; and the other is to give them acquaintance with capable men who are entering other professions and who are likely to be in control of large business interests. So much has been said about Harvard's competing with technical schools that I think our policy ought to be plainly stated once for all.

For the purpose of making clear at a glance the total sum necessary to give us a fair start, the following summary is added: —

Furniture for drafting-rooms, . . . . .	\$5,000
Machine tools for workshop, . . . . .	3,000
Surveying instruments, . . . . .	2,500
Another engine and accessories, . . . . .	25,000
Hydraulic laboratory, . . . . .	5,500
Heat and transmission laboratory, . . . . .	6,000
Electrical instruments, . . . . .	3,500
Total, . . . . .	<u>\$50,500</u>

During the year the students began the publication of an engineering journal intended to supply all students and graduates with the essential parts of the laboratory investigations and of some lecture courses. Contributions from graduates are also solicited. The three numbers of the journal which have appeared are creditable to a new enterprise managed by undergraduates.

In a future report a list of contributions to science by officers of the Division will be added. Some work of this kind has been done during the past year, although the time of the instructors has been almost wholly taken up in the class-room and in preparation for lectures.

IRA N. HOLLIS.

## THE PSYCHOLOGICAL LABORATORY.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—The work of the Psychological Laboratory during the last year has not shown any new departures; both the elementary and the advanced courses were given by the same instructors as in the previous year, and the attendance of the students was also about the same. But while the number of those who were engaged in original research—twenty, including the assistants—was not greater than the year before, their undertakings were more elaborate, and we have therefore felt more than ever before the inadequacy of our present quarters. There are many reasons which make desirable the early erection of the projected building for the Philosophical Division, Emerson Hall; but the demands of psychological research make it absolutely necessary if the present growth of the work is to continue. The hope of moving soon into a better domicile—while so far only a third of the necessary sum has been promised—has prevented our making any essential technical changes in the present laboratory. Many smaller pieces, however, have been added to the apparatus, as in every year. A third room has been given over to the new department of animal psychology which awakes increasing interest among the students. One assistant of the laboratory, Dr. Yerkes, devotes himself exclusively to this work in comparative psychology, while Dr. Holt assists in the work in human psychology.

The chief advance in the activity of the laboratory lies in the fact that while up to this time the laboratory work of the students has been scattered and has partly remained unpublished on account of lack of proper means, now it can at last be published in a special organ of publication. The "Harvard Psychological Studies," which appear as Supplementary Volumes of the Psychological Review, will contain merely work from the Harvard Laboratory; the first volume, containing sixteen papers, filling nearly 700 pages, has been printed with the financial aid of the University, and is to be issued at once. The limits of the volume do not allow a complete representation of last year's work. A chief factor in our laboratory work has been in the form of studies into the active functions of mind, as attention, apperception, and volition; several investigations of that group have been completed in the last year, but have not found a place in the first volume; they are held back for the second. In all other

respects the volume represents the scholarly production of the last year.

The papers group themselves as studies in "Perception," "Memory," "Aesthetic Feeling," and "Animal Psychology." In the group on "Perception" Dr. Holt publishes his investigations on central blindness during voluntary eye movements, and in another paper those on certain optical illusions; Dr. Rieber deals with tactual illusions and their relations to the tactual perception of space; Dr. MacDougall studies the power of orientation in space; Mr. Messenger's subject is the fusion and discrimination of touch sensations, and Mr. Dunlap publishes the first part of his investigations into the tactual perception of time intervals. The direct relation of these six studies to the problem of the interrelation of perception and motor response makes these papers practically a unity. In the same way the studies in each of the other groups belong together. There are three studies in "Memory": Dr. Meakin examines the mutual influences of memory ideas, Mr. Moore the voluntary control of memory ideas, and Mr. Peterson certain types of memory association. Studies in "Aesthetic Feeling" represent one of the most emphasized parts of our laboratory work. The disinterested, unpractical character of aesthetic feelings makes it possible to create them in a laboratory in a much purer form than any other feelings, and no experimental study of the feeling side of mind is therefore so accessible in the laboratory as that in the realm of aesthetics. Four long papers represent this type. Dr. Stetson studies "Rhyme," Dr. MacDougall "Rhythm," Miss Puffer "Symmetry," and Mr. Angier "Unequal Divisions." The last experimental group is that of "Animal Psychology": Dr. Yerkes brings here the first part of his investigation on the "Psychical Processes of the Frog," and Mr. Huggins with Dr. Yerkes their paper on "Formation of Habit in Crayfish." The only non-experimental paper of the volume is one by the Director of the Laboratory on "The Position of Psychology in the System of Knowledge." The relations of the Director to the whole content of the volume consists, as the preface says, in his proposing the subjects and methods of the investigations and supervising their experimental execution, while leaving fullest freedom to the individual authors in the exposition of their own views; the Editor, who was in his editing work much assisted by Dr. Holt, thus takes no responsibility for the special theories developed by the writers.

HUGO MÜNSTERBERG,  
*Professor of Psychology.*

## THE OBSERVATORY.

TO THE PRESIDENT OF THE UNIVERSITY : —

SIR, — The policy of the Harvard College Observatory, during the last quarter of a century, has been that of endeavoring to obtain the greatest possible scientific output from the available income. This has involved the undertaking of large pieces of routine work, and the employment of numbers of inexpensive assistants whose work is in a great measure mechanical, such as copying and routine computing. It seems desirable that at least one observatory should devote its energies to work of this class. Investigations beyond the reach of smaller observatories can thus be undertaken, and completed at a cost which is relatively very small. The establishment of the Peruvian station at Arequipa permits the entire sky to be studied, instead of confining our work to the stars visible at Cambridge. In each important investigation undertaken here, a method must first be developed for attaining the best results for a single star, and the observations repeated on all stars to which it is applicable, although in many cases this involves a repetition of the work many hundreds, or even thousands, of times, and renders it necessary that the observers and computers shall continue for years upon work of the same character.

Under this policy two important functions of an observatory are likely to be neglected. First, instruction, which is, however, partially provided for in the Students' Astronomical Laboratory of the University. A closer connection of this Laboratory with the Observatory is to be desired. Secondly, many important branches of research that an astronomer can undertake without assistance. They can, however, be done equally well elsewhere, since the equipment of a great observatory, intellectual as well as physical, is not required. In fact, this seems to be the most useful field for small observatories and amateurs. Better provision should be made by which men properly gifted can devote years to such work without supervision, or obligation to secure results.

Since research is the fundamental object of this Observatory, all its officers are encouraged in every way to engage in it. The assistants in charge of departments at the Harvard College Observatory

are not only required to develop methods, but to exhibit the executive ability necessary to carry them out successfully on a large scale. We thus indirectly develop astronomers and give them facilities they could not obtain elsewhere. The Draper Catalogue giving the class of spectra of ten thousand stars, the variables in  $\omega$  Centauri including about thirty thousand measurements, the meridian circle zones,  $+50^\circ$  to  $+55^\circ$ , and  $-10^\circ$  to  $-14^\circ$ , each containing about eight thousand stars, and the work with the meridian photometer, with which more than a million measurements have been made, are good examples of large pieces of routine work carried out in this way. An important field of work has thus been found for this Observatory, without in any way interfering with that of other astronomers.

The results appear to have been appreciated by the friends of the Observatory, as gifts have been received, not from one but from many, which have increased the capital of the Observatory from less than two hundred thousand dollars to more than nine hundred thousand. The income has similarly increased from less than twenty thousand dollars annually to fifty thousand, notwithstanding the great diminution in the rate of interest during the same period. The number of assistants has also increased from six to forty. The Observatory has thus been placed, in these respects, among the largest observatories in the world. The great increase in the output and in the corps has led to the belief that the Observatory is very wealthy, and not in need of money. Due consideration is not given to the fact that a large income can be expended much more economically than a small one, and that to maintain the institution on its present basis large expenditures are needed for other purposes. This is especially the case with the permanent plant. Modern Astronomy requires large and expensive instruments, and in a new observatory a large part of the available means is expended on them and on the buildings required to contain them. In the growth of this Observatory, we have been obliged to rely almost entirely upon the income of our funds, for permanent plant. The buildings, which are old and of wood, have become overcrowded, and in two or three cases the decay of the wood has endangered their safety. To replace them from the income would involve a great and disproportionate diminution in the current work, the dismissal of assistants who by years of practice have acquired special skill in a particular kind of work, or a failure to publish results of observations on which years of labor and thousands of dollars have been expended. The condition is that of a man with plenty of food who is dying of thirst, or who has no shelter in winter. With these urgent problems con-

fronting us, a friend presented the Observatory with \$20,000, making no condition except that the name of the donor should not be mentioned. Obviously, the results from such a gift are much greater than would be expected from its proportionate part of the entire endowment. The building containing the collection of photographs of the sky had become so crowded that no room was available for the additional photographs which are made on every clear night, and yet the value of this collection is increasing every year and furnishes the only existing history of the stellar universe for a definite number of successive years. A portion of this gift has enabled the Director to add to the building containing these photographs a fireproof wing of plain brick. Its cost was less than twenty-five cents a cubic foot, and every foot of space will be available since none is lost in stairways or entries; it will thus provide for the growth of the collection during the next ten or fifteen years. Again, recent experiments have proved that a large reflector will show stars so faint that their study with other telescopes is impossible. We have contracted with the firm of Alvan Clark and Sons for a mirror two feet in diameter, to be used first on the northern, and then on the southern stars, thus extending our work to vast multitudes of objects hitherto beyond our reach. The mounting will be constructed in our own workshop with a great saving of expense. This gift also provides means for supplying other urgent needs, as, for instance, the erection of a hydrant on the grounds, by which the danger of destruction by fire, of our wooden buildings and their valuable contents, is greatly diminished. The stimulus of such a gift upon the Director's own work, the way in which it was made by one from whom the Observatory had no reason to expect such aid, and the character of the donor as shown by his career, all combine to increase the results to be expected. It is hoped that these results will be such as to influence others by this example, so that the other departments of the Observatory may be made to correspond to its great development in certain directions. For instance, it is hoped that Memorial buildings may be erected in the Observatory grounds, like those on the College grounds. The library of the Observatory, one of the most complete and valuable astronomical libraries in the world, is in a wooden building half a century old, and is liable to destruction by fire at any time. The building containing the photographic laboratory and machine shop is also of wood and wholly inadequate for these purposes. The sum of \$10,000 or \$20,000 would supply either of these wants, and the name of the donor would always be honorably associated with such buildings.



Another anonymous gift has been received, which is of interest as suggesting a much wider field of usefulness for the Observatory than it now occupies. This gift at present amounts to \$70,000, of which \$10,000 is at once available. The income may be used for any astronomical work, whether undertaken at the Harvard Observatory or elsewhere. The first appropriation was made last summer to furnish an assistant at another Observatory, so that one of the largest telescopes in the world could be used during hours at which it would otherwise be idle. The Director of the Harvard Observatory is always likely to know of ways in which money could be expended to especial advantage for astronomical research. A pamphlet was published in 1886 by the undersigned, recommending the establishment of such a fund, and in 1890 Miss C. W. Bruce gave \$6,000 which was expended in this way. It is believed that the results attained show how advantageously such a fund can be administered here. The usefulness of this Observatory would be greatly increased if it should become an important part of the duty of its Director to aid other observatories and astronomers, to secure observations in neglected departments of Astronomy, and to enable competent observers to use the numerous large and valuable telescopes now idle. It seems as if the moral effect of thus bringing together the astronomers of the world so that they might work harmoniously on researches too large to be undertaken by any one of them, must appeal to some of the many friends and patrons that Astronomy has always had. The pamphlet mentioned above contains the reasons for believing that great permanency of good management, and efficiency in the expenditure of such a fund could be attained here. At least, the present condition of the Observatory is such as to insure the immediate expenditure of several thousand dollars a year to great advantage in this way.

#### OBSERVATORY INSTRUMENTS.

*East Equatorial.* — The observations with this instrument have been made by Professor O. C. Wendell, and have been of the same general character as in previous years. Seventeen thousand photometric light comparisons have been made, principally with the polarizing photometer with achromatic prisms. With this photometer 1,024 comparisons were made of X Cancri, 992 of U Cephei, 960 of U Sagittae, 944 of U Scuti, 880 of 78.1901 Cygni, 800 of R Ursae Minoris, 752 of  $\beta$  Persei, 736 of  $\chi$  Cygni, 528 of  $\beta$  Lyrae, 480 of W Delphini, 448 of U Ophiuchi, 416 of  $\dagger$  43° 4101, recently discovered here, 384 of Nova Persei, No. 2, 320 of X Persei, 192 of

R R Lyrae, 160 of S W Cygni, 160 of standard stars in the cluster Messier 15, 144 of Y Cygni, 96 of R Coronae, 96 of S S Cygni, 64 of T Cygni, 64 of T Persei, 64 of  $\mu$  Herculis, 48 of R Lyrae, and 32 each of U Geminorum, X Herculis, d Serpentis,  $\mu$  Cephei, and X Virginis. In addition to the above, 1,984 comparisons were made of  $\alpha$  Ceti, 288 of U Camelopardali, and 1,968 of double stars, with a second photometer adapted to the comparison of stars too near together to be measured with the first instrument. The same instrument has been used in the photometric measurement of Jupiter's satellites while undergoing eclipse. 17 eclipses have been observed, making the total number 736. Photometric observations of comparison stars for variables have also been continued, the number of settings being 192. The systematic observation of variable stars of long period throughout their changes, and the reduction of the results to the scale of the meridian photometer have been continued. 250 estimates by the method of Argelander have been made, generally when the stars were too faint to be observed with small instruments. The selection of fourteenth magnitude standards has been continued. Several other objects of a miscellaneous character have also been observed.

Similar observations of variables and comparison stars have been made with the West Equatorial. With it 1,130 estimates of variables, and 235 estimates of comparison stars have been made by Miss Cannon, 3,324 estimates of variables, and 170 estimates of comparison stars have been made by Mr. Campbell, with the naked eye, field-glass, and a 5-inch portable telescope. 391 estimates of variables have been made by Mr. Colson, and 326 by Mr. White. 981 estimates of variables have been made by Mr. F. E. Seagrave of Providence, and communicated by him to this Observatory. Observations of variable stars have also been communicated by Mr. John H. Eadie of Bayonne, N. J., Professor M. W. Whitney of Vassar College, Mr. Robert M. Dole of Jamaica Plain, Herr Phil Fauth of Landstuhl, Senor Pereira, and Senor Manoel Soares de Mello e Simas of St. Michaels, Azores.

*Meridian Circle.*—The principal use of this instrument during the year has been the determination of clock error, but on 20 dates observations of Nova Persei, No. 2, or faint stars in its vicinity, were made by Mr. Dunne. The total number of transits, including those of circumpolar and almanac stars required for the reduction of the observations, was 218. On 10 other dates observations were made with wire screens, in order to furnish an independent determination of personal equation with respect to magnitude. These

observations have not yet been reduced. The power of the instrument in exhibiting faint stars was compared with that of the four-inch transit circle of the Students' Astronomical Laboratory, by a short series of observations in June, 1902, from which it appeared, as had been previously thought, that the 8-inch object glass of the meridian circle was less efficient than would be supposed from its size.

The reduction of the observations of stars in the zone —  $9^{\circ} 50'$  to —  $14^{\circ} 10'$  has proceeded so far that the results in right ascension and declination for 1900.0 are now very nearly complete, and are collected in readiness for the computation of the mean result for each star. But it is expected that cases of large discrepancy, especially in the observations of the years 1896 to 1898, will be found to require a second reduction, and that entire zones may need small corrections when the residuals of the separate observations have been obtained for the zone journal. The work of collecting the estimates of magnitude is also largely completed, and the preparation for publication, both of the final catalogue and of the zone journal, has been begun.

The reduction of the observations made by the late Professor Rogers, during the years 1879 to 1883, has been continued by Miss S. C. Bond under the supervision of Miss Anna Winlock. The computation of the reductions from apparent to mean place at intervals of ten days for all the stars observed is now complete. About 3,000 reductions for single observations have been obtained by interpolation from these computations, and about as many more remain to be obtained.

*12-inch Meridian Photometer.* — With this instrument 66,932 settings have been made by the Director on 118 nights. In all, 265,604 settings have been made in four years. The principal work has been the extension of the photometric scale from the tenth to the thirteenth magnitude. Sequences of stars have been selected and measured for all the regions contained in Series I, II, and III, of Hagen's Catalogues, from the magnitude 7.5 to 12.5, and in Series IV, from 7.5 to 10.5.

*Meridian Photometer.* — With this instrument 10,784 measures were made by Professor Bailey on 30 nights, from October 1, 1901, to April 18, 1902. It was then dismantled and sent to Peru, where he obtained 7,804 settings on 18 nights, from July 10 to September 30, 1902. The principal objects observed were a series of stars of about the fifth magnitude, one in every region  $10^{\circ}$  square. Each star was to be observed twice on ten nights, taking various precautions so that the resulting magnitudes should furnish accurate

standards of photometric magnitude, from the north to the south pole. Various miscellaneous objects, including comparison stars for Eros, Iapetus, and variables, were also measured. The total number of settings so far obtained with this instrument is 1,051,768.

#### HENRY DRAPER MEMORIAL.

Since its establishment in 1886, the Henry Draper Memorial has developed three new and unique lines of work. First, by the substitution of the objective prism and doublet for the slit spectroscope and single lens, the spectra of large numbers of stars are photographed simultaneously by the former, instead of singly by the latter method. These photographs have been repeated until every portion of the sky has been covered, using the 8-inch Draper telescope for the northern stars, and the Bache telescope, an 8-inch doublet of similar construction, for the southern stars. As a result, we have a photograph of the spectrum of every star in the sky permanently brighter than the ninth or tenth magnitude, besides many thousands that are fainter. These plates have been carefully examined by Mrs. Fleming, with the result that large numbers of objects having peculiar spectra have been discovered. The number of such objects found elsewhere is small, and it is probable that all that are bright have been found from these plates, thus making this part of the work complete. We are now extending it to the fainter stars, using smaller dispersions and longer exposures. There are two classes of stars that can only be studied by frequent photographs like those described above. Of the eight Novae which are known to have appeared during the last sixteen years, two were bright and visible to the naked eye. All of the others were found from the Draper photographs, and would probably otherwise never have been discovered. Variable stars of long period have very peculiar spectra which differ greatly from one another, and can generally be photographed only when they are bright. Nearly two hundred of these objects have been discovered from the Draper photographs. Secondly, by placing large objective prisms in front of the 11-inch Draper telescope, stellar spectra six inches long and showing several hundred lines have been obtained. Shorter spectra were obtained of the fainter stars, and from them a detailed study of 681 of the brighter stars visible in Cambridge was made by Miss Maury. A similar study of 1122 southern stars photographed with the 13-inch Boyden telescope has been made by Miss Cannon. Although the stars have thus been arranged in a logical sequence, the object was rather to show that large numbers of stars had identical spectra, and

then to publish all the facts regarding a typical star of each group. All the material is thus furnished to any future investigator, so that he may continue his studies without having recourse to these or other photographs. The discovery of spectroscopic binaries, of stars having the hydrogen lines bright and variable, and of a new series of hydrogen lines, resulted from these investigations. The third field of work is perhaps the most important of all. By photographing repeatedly all portions of the northern sky with the 8-inch Draper telescope, and of the southern sky with the Bache telescope, we have a map of the entire sky showing all the brighter stars night after night. This furnishes a complete history of the heavens for every year since 1890, and a partial history since 1886. When any new object is discovered, we can trace its motion or variations in brightness, throughout this period from these photographs. As no such collection of photographs has been made elsewhere, the importance of properly caring for it, and continuing it, is obvious. An additional force of assistants is much needed to study these plates, and thus determine the past history of known objects, and of new ones as fast as they are discovered.

The number of photographs taken with the 11-inch Draper telescope is 475, making 14,020 in all with this instrument; with the 8-inch Draper telescope, 1,642, making in all 29,298. The total number of photographs of the stars taken at Cambridge during the year is 4,254. Fifteen eclipses of Jupiter's satellites, and ten occultations, have been successfully photographed with the 11-inch Draper telescope. Four variable stars have been found by Mrs. Fleming from an examination of the Draper photographs. One of these, +43° 4101, proved to be an Algol variable with a period of 80 days, and duration of obscuration 2 days. This period is much longer than that of any other Algol star as yet discovered, the next longest period being that of S Cancri, which is 9.5 days. The other three were found from the presence of bright hydrogen lines in their spectra. One of these, whose position for 1900 is R. A. = 12<sup>h</sup> 50<sup>m</sup>.7, Dec. = -57° 21', has a peculiar spectrum. A fifth variable, +40° 4390, found by Mr. J. A. Dunne with the Meridian Circle, was confirmed by the Draper photographs.

The general plan of taking the photographs, as described in the last report, has been maintained under the direction of Mr. King. The illumination of the sky by electric lights limits the time of exposure, as the faintest stars do not appear when the fogging of the plates exceeds a small amount. For this reason, an exposure of three hours with the 8-inch Draper telescope fails to show faint

stars any better than an exposure of one hour; and this instrument is not used, even for exposures of ten minutes, for several days each month, on account of the Moon. Several of the brighter asteroids are photographed every month as standards of magnitude in different parts of the sky.

#### BOYDEN DEPARTMENT.

The station at Arequipa remained under the charge of Mr. H. C. Bailey from October 1, 1901, to March 1, 1902. It was in charge of Mr. R. H. Frost from March 1 to June 1, 1902, and since June 1, 1902, in charge of Professor Bailey. The number of photographs taken with the 13-inch Boyden telescope is 276, making 10,630 in all. A few of these are charts of clusters, but nearly all of the remainder are photographs of the spectra of stars in which the hydrogen lines appear to be variable, and of spectroscopic binaries. 2,140 plates have been taken with the Bache telescope, making 30,748 in all. Nearly all of them are charts with exposures of 10<sup>m</sup>, and 60<sup>m</sup>. The total number of photographs taken at Arequipa during the year is 3,919. One reason for Professor Bailey's trip to Peru was to study the variations in light of the planet Eros. At its next opposition, this planet is so far south that it cannot readily be observed in Europe or in the United States, and is so faint that powerful instruments will be required to observe it. The meridian photometer has accordingly been sent to Peru to determine standards for comparison, and also to continue the work undertaken here as described above. One of the photometers used in the determination of faint stellar magnitudes by the coöperation of the Yerkes, Lick, McCormick, and Harvard Observatories, has also been sent to Peru. This photometer has been attached to the 13-inch Boyden telescope, and has already been used by Mr. Bailey on 24 nights, from July 28 to September 30, 1902. Measurements have been made with it of Sirona, Tercidina, of comparison stars for variables, and of a few variables. Attempts have been made to secure monthly observations, by Argelander's method, of 50 southern variables. This has been much interrupted by other work, but since March, 1902, it has been actively resumed.

#### BRUCE PHOTOGRAPHIC TELESCOPE.

During the last year, 438 plates have been taken with the Bruce photographic telescope, making 6,174 in all. Before February 1, 1902, these plates were taken by Dr. DeLisle Stewart, and since then by Mr. R. H. Frost. With this instrument, excellent chart

plates can be obtained of regions  $5^{\circ}$  square, the images in the centres of the plates being almost perfectly circular even when the exposure lasts four or five hours. A large number of trails of asteroids have been photographed, several of which are probably new. One of these has a greater eccentricity than any other known asteroid, and exceeds that of some of the periodic comets. The name Oello has been given to it by the discoverer, Dr. Stewart, after the Peruvian goddess, who with her brother Manco was supposed by the Incas to have descended from the Sun. A photograph of Eros was obtained on July 7, 1902, nearly a month before it was observed elsewhere after its conjunction with the Sun.

#### BLUE HILL METEOROLOGICAL OBSERVATORY.

The work of the Observatory was performed, under the direction and at the expense of Mr. Rotch, by the three assistants formerly employed. The special investigations in 1902 included determinations by day and night of the atmospheric refraction above land and water, and a few measurements of the quantity of carbon dioxide in the air and of the electrical potential of the air, by Mr. G. W. Pickard. Commencing in December, kite-flights were made on a fixed day each month, in coöperation with simultaneous ascensions of balloons and kites in Europe. The mean altitude above the sea of the meteorograph in the ten flights at Blue Hill was 9,200 feet, which is 1,925 feet above the mean of the flights during the preceding year, and is the highest annual average yet attained. The maximum altitude of 14,060 feet exceeds by 1,510 feet the highest flight of the year before. Mr. Rotch's project of exploring the atmosphere above the tropics and the Equator with kites flown from a steamship was approved by the International Aeronautical Congress that met at Berlin in May, and he has requested a grant from the Carnegie Institution to partially defray the cost of the expedition. The Observatory is being remodelled, and a much needed fireproof building for the library and records generously added by Mr. Rotch, at an approximate cost of \$6,000.

#### MISCELLANEOUS.

*Library.* — The Library of the Observatory has been increased by 292 volumes and 973 pamphlets. The total numbers of volumes and pamphlets in the Library on October 1, 1902, were 10,369 and 17,179, respectively. Special efforts are being made to render the meteorological, as well as the astronomical, collection of publications here and at Arequipa as complete as possible. Owing to the number

of buildings connected with the Observatory, duplicates of important publications are in constant use. Every year the need of additional space for books is becoming more urgent.

*Telegraphic Announcements.* — During the last year, 22 bulletins have been issued, making 111 in all. The bulletins are sent gratuitously to all such institutions, newspapers, and individuals as desire them and are likely to make use of them. In general, when a cipher telegram is received at the Observatory, it is translated, printed by an autographic process upon the bulletin sheets, and mailed within about an hour of the receipt of the original message. Several persons are prepared to take charge of the distribution, so that in the absence of one, another is available. Of the 22 messages distributed this year, 4 were received from Professor Kreutz, Kiel, 9 from the Lick Observatory, 3 from the Yerkes Observatory, 2 from Professor Brooks, and one each from four other sources. The distribution of the announcements by telegraph is continued to such subscribers as wish to pay for the messages. The plan of the Lick Observatory, to follow promptly the discovery of a comet made there or elsewhere by three observations of its position, and by elements and an ephemeris, adds greatly to the ease with which such objects can be followed.

Astronomers are requested, as heretofore, to send to this Observatory announcement of their discoveries for transmission to the observatories of Europe and America. To secure prompt attention, it is requested that all cablegrams be addressed, "Observatory, Boston," and all telegrams, "Harvard College Observatory, Cambridge, Mass." All correspondence relating to telegrams and announcements should be addressed to the Director.

*Time Service.* — On June 14, 1902, a new system of public time signals, devised by Mr. Gerrish, was put into operation. Incandescent electric lights are made to pulsate in response to the telegraphic signals of the standard clock, reproducing visually the regular standard signals which have hitherto been sent out by telegraph. A single 32-candle-power lamp has been placed on the top of the residence of the Director and can readily be seen by the unaided eye at a distance of four miles. A group of lights in the window of the Traveller office at 76 Summer St., Boston, serves to give accurate time to the public in the vicinity of the South Terminal Station. Unfortunately, neither of these signals is visible from the water-front. At a trifling expense a light could be maintained in Boston which could be seen all over the harbor, and would be of great value to shipmasters and others. The new system has many marked advantages over the



time-ball. The signals are automatic, can be seen much farther, and can be operated continuously.

*Fire Protection.*—The older buildings containing the valuable library and instruments have for a long time been a cause for anxiety on account of danger from fire. Accordingly, a hydrant has been installed inside the grounds, connected by a six-inch pipe with the high pressure service of the city. Three lines of standard two and a half-inch hose can be supplied from the hydrant, while a fourth line is provided at the Sears Tower by a three-inch branch pipe leading to that point. A hose carriage carrying 300 feet of hose, sufficient to reach the farthest building on the grounds, is stationed at the hydrant to which the hose is kept constantly coupled. The whole is enclosed in a suitable building. The pressure at the hydrant is sufficient to throw a one-inch stream on to the roof and dome of the West Wing. With this equipment, in addition to the chemical extinguishers and electric fire alarms installed several years ago, it is hoped that any ordinary fire could be successfully handled until the arrival of the fire department. A fire drill is held every two months, in order to familiarize the staff with the apparatus and its use. Upon the sounding of an alarm, the chemical extinguishers may generally be depended upon within forty seconds, and the water from the heavy hose a few seconds later.

*Steam Heat.*—In the fall of 1901, a steam heater was installed in the basement of the West Wing, and radiators were placed in the Rotunda, and North and East Wings. A large amount of space has thus been rendered available for general purposes which has not hitherto been utilized except for storage. The apparatus gave such satisfaction during the past winter that the system has been extended to the West Wing, replacing the old hot-air furnace. The entire work of installation has been done by regular employees of the Observatory under the direction of an Observatory officer, and at a considerable saving in cost.

*Publications.*—Volumes XXXVII, Part II, XXXVIII, XLI, Nos. VII, VIII, and IX, XLIII, Part II, and XLVIII, No. I, have been printed and distributed. Volume XLIV, Part II, Reduction of Observations made with the Meridian Photometer during the years 1892 to 1898, is in type. 55 pages of Volume XLVI, Observations of Southern Stars, made with the Meridian Photometer in 1899, 17 pages of Volume XLVII, Observations of Photographic Variables, pages 39 to 83 of Volume XLVIII, Observations of the Light Curve of Nova Persei, No. 2, and 14 pages of Volume XLIX, Photometric Observations made with the East Equatorial, are in type.

The first forty-five volumes of the *Annals* are therefore completed, with the exception of Volumes XXXIX, XLIII, and XLIV, of which the first portions only have been distributed. The four volumes following XLV have also been begun.

Owing to the time devoted to the preparation of the above publications, only four circulars have been issued during the year. The numbers, titles, and dates, are as follows:—

62. Spectrum of Lightning. November 16, 1901.
63. An Asteroid Orbit of Great Eccentricity. November 19, 1901.
64. Early Observations of Algol Stars. January 18, 1902.
65. A New Algol Variable. May 6, 1902.

The following other minor publications have also appeared during the year:—

- Fifty-sixth Annual Report of the Director of the Astronomical Observatory of Harvard College. Cambridge, 1901.
- Recent Total Eclipses of the Sun. By Solon I. Bailey. *The Popular Science Monthly*, lx, 240.
- The Green Flash at Sunset. By W. H. Pickering. *Monthly Notices. R. A. S.*, lxi, 629.
- Additional Note on the Green Flash. By W. H. Pickering. *Ibid.*, lxii, 85.
- Explanation of the Inclination of the Planetary Axes. By W. H. Pickering. *Astronomical Journal*, xxii, 56.
- Period of Revolution of the Leonids. By W. H. Pickering. *Popular Astronomy*, x, 8.
- Dr. Klein's Criticism on W. H. Pickering's Observations. By W. H. Pickering. *Ibid.*, x, 118.
- The Explosion Hypothesis in the Light of the Recent Phenomena of Nova Persei. By W. H. Pickering. *Astrophysical Journal*, xv, 68.
- Affindung von (433) Eros. By Edward C. Pickering. *Astron. Nach.*, clix, 307.
- Astronomical Bulletin. By Edward C. Pickering. *Ibid.*, xv, 996.

EDWARD C. PICKERING, *Director.*

## THE MUSEUM OF COMPARATIVE ZOÖLOGY.

TO THE PRESIDENT AND FELLOWS OF HARVARD COLLEGE:—

During the past academic year the regular courses in Zoölogy, Geology, Geography, and Meteorology were given in the Laboratories of the Zoölogical Section of the Museum. During the second half-year some of the courses under the Department of Geology were transferred to the new southwest corner-piece, the Geological Section of the Museum.

Eleven courses in Zoölogy were given by Professors Mark, Jackson, Parker, Drs. Castle and Rand, assisted by Messrs. Breed, Carpenter, Ordway, Peters, and six sub-assistants. These courses were attended by two hundred and sixty-seven students. Five courses in Zoölogy were given to thirty-five students of Radcliffe College.

Seventeen courses under the Department of Geology were given by Professors Shaler, Davis, Jackson, Ward, J. B. Woodworth, and Dr. Jaggar, assisted by Messrs. Goldthwait, Wilder, and Woodman, and three sub-assistants. These courses were attended by five hundred and sixty-nine students. Six courses in Geology were attended by sixty students of Radcliffe College.

In Professor Ward's report will be found a detailed account of the equipment and assignment of the rooms in the new Geological Section of the University Museum. It is doubtful if any Geological Department connected with an institution of learning is so comfortably and liberally housed as that of Harvard University in its University Museum. But one hundred feet of the south wing are needed to realize the plan of its distinguished founder and give to Harvard University a Museum with Laboratories of Natural History suited to its needs.

The Corporation of the University has added materially to the efficiency of the fire apparatus of the Museum by installing new stand-pipes and hand fire-extinguishers of the "Underwriter" pattern.

The withdrawal of the Department of Geology has necessitated a thorough overhauling and renovation of the rooms occupied by them as well as the old Zoölogical Laboratories. In addition to painting and plastering, new floors have been laid in five of the rooms. The Department of Zoölogy, including Palaeontology, now has thirteen laboratories and lecture rooms, besides a workshop, photographic

room, vivarium, and an aquarium in the basement, providing the Department with facilities for instruction and research of which it has been much in need.

The chief additions to the exhibition rooms consist of two very large mounted specimens of the great land tortoises of the Galapagos Islands in the Pacific Room, and the installation in the Atlantic Room of the microscope and mounted collection of "Albatross" Foraminifera presented by Dr. J. M. Flint, U.S.N. The different Museum Assistants report that the collections are in good condition. Among the many accessions the most noteworthy are Mr. Scudder's gift of his extensive collection of early stages of Butterflies, and Dr. Thaxter's collection of Moths. The Museum has received from Mr. Frank Springer all of the material for his monograph of *Uintacrinus*, given some time ago.

The library shows an ever-increasing number of accessions. More than five thousand five hundred volumes, parts of volumes, and pamphlets were added during the past year. Eighty volumes were added to the library of the Entomological Department from the income of the Willard Peele Hunnewell Memorial Fund. The rapid growth of the library and the increasing demands upon it by the students of the University and those of Radcliffe College call for a greater expenditure from the general funds of the Museum for its maintenance. Funds are much needed for library purposes, — such as funds for special departments and a binding fund. The Hunnewell Fund is the only one now at the disposal of the Museum exclusively for library uses.

The publications during the past year have been more than the usual number. Seven numbers of the "Bulletin" with 341 pages and 42 plates, and six numbers of the "Memoirs" with 438 pages and 76 plates, were issued. Five of the six "Memoirs" are reports of the Results of Mr. Agassiz's "Blake" and "Tropical Pacific" Expeditions. These include two numbers of the "Blake" series (Nos. XXXIX and XL), the Dromiacea and Oxystomata, and Bathynomidae by Milne Edwards and Bouvier. Mr. Agassiz's Preliminary Report (No. I) of the "Tropical Pacific Expedition" and (Nos. II and III) the Medusae by Mr. Agassiz and A. G. Mayer, and the latter's Report on *Partula*, Volumes XXXVIII, XXXIX, XL, and XLI of the "Bulletin," and Volumes XXV, XXVI, XXVII, and XXVIII of the "Memoirs" are in course of publication.

In November of last year, I accompanied Mr. Agassiz on his expedition to the Maldive Islands, the only group of atolls that he had not seen in his extensive studies of coral formations. Mr.

Agassiz also took with him as assistants his son Maximilian and Mr. H. B. Bigelow. The expedition started from Colombo on the Steamer "Amra," chartered from the British India Steam Navigation Co., and commanded by Captain Wm. Pigott, R.N.R. One month was spent in exploring the atolls of the Maldive group. More than eighty soundings were made with a Lucas machine in 1,500 fathoms and under, and a splendid series of over three hundred photographic negatives were secured, the weather being most favorable at all times. Towing with intermediate nets down to 150 fathoms was done, as well as surface towing, bottom dredging, and shore collecting as time permitted. The results of the expedition were most satisfactory in every way, and to the interest and zeal of Captain Pigott and the officers of the "Amra" is due much of its success. Thanks are also due to the British Colonial Office and the officials at Ceylon, to Messrs. Bois Bros. & Co., the agents of the British India Steam Navigation Co., and to his Highness the Sultan of the Maldives. Several reports of the results of the expedition are nearly ready for the printer. Again I am indebted to Mr. Samuel Henshaw for assuming charge of the Museum during my absence.

It is with regret that I have to record the death of Alpheus Hyatt, Museum Assistant in Invertebrate Palaeontology. Professor Hyatt was one of the early students of Louis Agassiz. He is mentioned in the first annual Report of the Museum for 1859, and his name occurs throughout the series, as from his student days he worked more or less continuously on the collections. He served the Museum as Assistant in Palaeontology from 1885 up to the time of his death in 1902, the greater part of the time without salary. He was inspiring as a teacher, and his work as an investigator has left a lasting impression in the fields of Invertebrate Palaeontology. His genial and kindly nature endeared him to his associates. In accordance with his expressed wish, all of the types in his personal collection are given to the Museum, the remainder of the collection being divided between the Museum and the Boston Society of Natural History. From his library the Museum has also received upwards of 800 volumes and pamphlets.

I have also to record the death of Eli Goodrow, for more than thirty-six years the devoted and faithful Janitor of the Museum; he had served the Museum almost from its beginning, and the evidences of his handiwork throughout the building show his interest in its growth and development.

W. McM. WOODWORTH,  
*Keeper of the Museum.*

## THE ZOÖLOGICAL LABORATORY.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—The following table gives the number of students in the various classes of Harvard College, the Lawrence Scientific School, and other departments of the University, who were in attendance on the several courses in Zoölogy during the College year 1901–02, the numbers printed in italics indicating Scientific-School students:—

Courses. 1901–02.	Grad.	Sen.	Jun.	Soph.	Fresh.	Spec.	Bus- sey.	Instr.	Total.
Zoölogy 1	1	12+3	23+3	25+6	31+10	6+6	1		99+28=127
“ 2	2	6	6+1	12+5	6	+2			82+ 8= 90
“ 3	6	7+1	5+7	3+5		1+3			22+16= 38
“ 4	3	3+1	1+1	+4		+1			7+ 7= 14
“ 5	3	3	1	+3					7+ 3= 10
“ 9	3		+1						3+ 1= 4
“ 9a			+1			+1			+ 2= 2
“ 11	7		1						8
“ 18	4	1+1		1				1	7+ 1= 8
“ 15	3	1+1		1					5+ 1= 6
“ 20a	9	+1							9+ 1= 10
									199+68=267

The corresponding information about students of Radcliffe College is given in a second table:—

Courses, 1901–02.	Grad.	Sen.	Jun.	Soph.	Fresh.	Spec.	Total.
Zoölogy 1 . . . . .		3	1	7	3	2	16
“ 2 . . . . .			1	2	2	2	7
“ 3 . . . . .	1	1	1			2	5
“ 4 . . . . .	2		1			1	4
“ 20a . . . . .	2	1					3
Total . . . . .							35

There has been no change during the year in instructors, nor in their rank, and the courses have been carried on in most cases sub-

stantially as in the preceding year. The assistants in the several courses are named in connection with the statements about the work of the courses.

In Zoölogy 1 the students have been required, as in 1900-01, to concentrate their laboratory work. Professor Parker has had as Chief Assistant Mr. R. S. Breed, and as Sub-Assistants, Messrs. Grant Smith, Chauncy Juday (who was early obliged to withdraw from the University on account of serious sickness), and J. M. Johnson. The Assistant in the course given to students of Radcliffe College was Mr. C. W. Hahn. It is proposed to devote hereafter half an hour of each three-hour laboratory exercise to an informal review and quiz.

The lectures in Zoölogy 2, by Dr. Castle, were substantially like those of previous years. The laboratory exercises were somewhat changed. The flat-worm type was studied in permanent entire preparations and in prepared sections of the ectoparasite *Bdelloura*. By shortening somewhat the time hitherto devoted to the anatomy of the frog, it was possible to give some attention to the external features of the metamorphosis of the tadpole. The Chief Assistant in the course was Mr. A. W. Peters, the Sub-Assistants Messrs. C. H. Lander and J. A. Long. The Assistant in the course given to Radcliffe students was Mr. Grant Smith.

The number of lectures in Zoölogy 3 was increased from sixty-one, the number given in 1900-01, to sixty-six. The course was attended by a larger number of students than in any previous year, forty-one having been enrolled. The laboratory work was with the same representatives of the classes of vertebrates as previously, except that the cat was dissected in place of the rabbit, satisfactory arrangements having been made for procuring material. Dr. Rand had as Chief Assistant Mr. F. W. Carpenter; as Sub-Assistant, Mr. M. E. Stickney. The Assistant in the corresponding Radcliffe College course was Mr. W. P. Hager. It is hoped that in the future some time spent by students in the routine labor of preparing skeletons can be saved by providing multiple sets of certain of the skeletons studied.

In Zoölogy 4 less attention than usual was given in the lectures to bibliographic methods. In the laboratory fewer methods were employed and more time given to the study of preparations of the animal selected — as usual, *Glossiphonia*. As in former years, a certain number of lectures were given on the anatomy and histology of this leech.

The lectures in Zoölogy 5 were given by Professor Mark, as usual, the ground covered being the general development of Vertebrates, not including organogeny, but embracing the discussion of many theoretical problems. The laboratory work in both Zoölogy 4 and 5 was under the supervision of Dr. Rand, who also supervised the laboratory exercises of Radcliffe students in Zoölogy 4.

Both of Professor Jackson's courses on Fossil Invertebrates — Zoölogy 9 and Zoölogy 9a — were given. It seems probable that the plan of dividing Zoölogy 9 into two half-courses has been justified by this year's experience.

The general subjects dealt with by Dr. Castle in the lectures of Zoölogy 11 were Variation and Heredity. The effects of close-breeding and of cross-breeding in relation to variation, and the subject of hybridization were considered in some detail, and, among others, the following topics were discussed: the relation of local races to species, especially when interbred; the part played by sports in race-formation; the nature and causes of prepotency, telegony, xenia, grafts, and graft-hybrids. A number of interesting topics were assigned to members of the class, from several of which important results have been obtained.

Dr. Castle has himself continued his breeding experiments with mice and with guinea pigs. Incidental to the main inquiry, which has not yet reached a final solution, certain interesting problems have arisen. A four-toed race of guinea pigs is being rapidly established, certain individuals having yielded more than fifty per cent of young that possess this peculiarity. As the race becomes established, it is proposed to study statistically the heredity of the four-toed character in cross-breeding with normal individuals. An experiment of close-breeding with guinea pigs has been carried successfully through several generations, and its results are being carefully studied.

Zoölogy 13 was conducted by Professor Parker as in 1900-01, except for a few minor changes. In Zoölogy 15 there were, besides the regularly enrolled students, three others who attended all the lectures. Four of the topics assigned to individual students for investigation have yielded results that are to be presented for publication.

Nine students were engaged in research (Zoölogy 20a) under the supervision of Professor Mark. Three of these have completed papers which are ready for publication. Two students in Radcliffe College also carried on researches under direction of Professor Mark, and a third, who was not enrolled, was assisted during a part of the year in some researches in cytology.



In future the duty of supervising the researches of advanced students will not fall wholly on the Director of the Laboratory, but will be shared by all the Faculty members of the department.

Mr. H. Crawley, though not a student in the department during the year, has published in the Proceedings of the Academy of Natural Sciences of Philadelphia a paper on "The Progressive Movements of Gregarines," the work on which was begun here during the year 1900-01. Mr. A. W. Peters has made good progress with his work on the metabolism of Infusoria. The final paper on Reissner's fibre by Mr. P. E. Sargent is nearly ready for publication. Mr. C. H. Lander has finished a study of the anatomy and histology of *Hemiusurus crenatus*. Other papers were completed by candidates for the Doctor's degree.

During the current year Dr. Rand has published No. 126 of the Contributions from this Laboratory, and also numerous abstracts and reviews in the "American Naturalist." Professor Parker had the editorial management of the "American Naturalist" during the absence of Dr. W. McM. Woodworth, from November till March, and besides contributing reviews to that journal and to "Science," has published No. 133 of the Contributions from this Laboratory and also the results of work carried on for the U. S. Fish Commission: "The Reactions of Copepods to Various Stimuli and the Bearing of this on Daily Depth Migrations," in Bull. U. S. Fish Comm. 1901, pp. 103-123.

In June, 1902, the degree of Doctor of Philosophy was conferred upon two candidates in Zoölogy, Mr. Robert Stanley Breed, whose thesis was on "The Changes which occur in the Muscles of a Beetle (*Thymalus marginicollis* Chevr.) during Metamorphosis"; and Mr. William Martin Smallwood, whose thesis was entitled "The Maturation, Fertilization, and Early Cleavage of *Bulla solitaria*."

Dr. Breed has been appointed Professor of Biology and Geology in Allegheny College, Meadville, Pa., and Dr. Smallwood has received an appointment as Assistant Professor of Zoölogy in the University of Syracuse.

Upon recommendation of the Division of Biology, Dr. Charles W. Prentiss was reappointed to a Parker Fellowship for the year 1902-03. His first year abroad was spent at Freiburg i. Br. and at the Naples Zoölogical Station, where he was the occupant of the Smithsonian Table for a number of months.

The Virginia Barret Gibbs Scholarship for 1901-02 was held by Mr. W. Martin Smallwood. Eleven persons, instructors and advanced students, have been carrying on studies at the Laboratory

of the U. S. Fish Commission at Wood's Hole during the summer of 1902. Of these, eight have received aid from the Humboldt Fund.

The meetings of the Zoölogical Club were held on Thursday afternoons from 4.30 till 6 o'clock throughout the year.

The transference of the instruction in Geology to the new south-west corner of the University Museum has made it possible to assign to the Department of Zoölogy several additional rooms, which, with the alterations and renovation of present quarters, will give the department much better facilities for instruction and especially more ample space for research students.

CONTRIBUTIONS FROM THE ZOÖLOGICAL LABORATORY FOR  
THE ACADEMIC YEAR 1901-02.

126. RAND, H. W. — The Regenerating Nervous System of Lumbricidae and the Centrosome of its Nerve Cells. *Bull. Mus. Comp. Zoöl.*, Vol. 37, No. 3, pp. 83-164. 8 pls. September, 1901.
127. FRANSEN, P. — Studies on the Reactions of *Limax maximus* to Directive Stimuli. *Proc. Amer. Acad. Arts and Sciences*, Vol. 37, No. 8, pp. 183-227. 22 figs. October, 1901.
128. YERKES, R. M. — A Contribution to the Nervous System of *Gonionemus murbachii*. Pt. I. *Amer. Jour. of Physiol.*, Vol. 6, No. 6, pp. 434-449. February, 1902.
129. OPPENHEIMER, A. — Certain Sense Organs of the Proboscis of the Polychaetous Annelid *Rhynchobolus dibranchiatus*. *Proc. Amer. Acad. Arts and Sciences*, Vol. 37, No. 21, pp. 551-569. 6 pls. April, 1902.
130. WILLIAMS, S. R. — Changes Accompanying the Migration of the Eye and Observations on the Tractus opticus and Tectum opticum in *Pseudopleuronectes americanus*. *Bull. Mus. Comp. Zoöl.*, Vol. 40, No. 1, pp. 1-57. 5 pls., 7 figs. May, 1902.
131. YERKES, R. M. — A Contribution to the Nervous System of *Gonionema murbachii*. Pt. II. *Amer. Jour. of Physiol.*, Vol. 7, No. 2, pp. 181-198. May, 1902.
132. BIGELOW, M. A. — The Early Development of *Lepas*. A Study of Cell-Lineage and Germ-Layers. *Bull. Mus. Comp. Zoöl.*, Vol. 40, No. 2, pp. 59-144. 12 pls. July, 1902.
133. PARKER, G. H. — Notes on the Dispersal of *Sagartia luciae* Verrill. *Amer. Nat.*, Vol. 36, No. 426, pp. 491-493. June, 1902.
134. HOWE, F., Jr. — A Case of Abnormality in Cats' Paws. *Amer. Nat.*, Vol. 36, No. 427, pp. 511-526. 18 figs. July, 1902.

E. L. MARK, *Director.*

## DEPARTMENT OF GEOLOGY AND GEOGRAPHY.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—As Chairman of the Department of Geology and Geography, I have the honor to submit the following report for the year 1901–02.

The only changes of note in the instruction given in the year 1901–02, as compared with that of the preceding year, were the omission of Geology 11, a half-course in Oceanography, formerly given by Dr. R. A. Daly, who resigned in June, 1901, to accept a position on the Canadian Geological Survey, and the omission of Geology *A* from the Radcliffe list. Dr. Daly's place as Instructor in Physiography was filled by the appointment of Mr. M. Alston Read, who gave Geology *A* (Elementary Physiography), and also acted as Assistant in Geology 4, 14, and 14*a*. The following gentlemen acted as Assistants in the various courses named: Mr. J. E. Woodman in Courses 4, 5, and 8; Mr. F. M. Wilder in *B*, and Mr. J. W. Goldthwait in 5. In addition, Messrs. R. M. Brown, H. S. Gale, and L. E. Hunt served as student-assistants in the laboratory and field work of Geology 5, under the direction of Professor Woodworth; and Mr. Laurence La Forge acted as field and laboratory Assistant in Geology 22, under Dr. T. A. Jaggar.

The summer courses in Geology and in Geography were given along the same lines as in previous years. The course in Geology was given by Mr. J. E. Woodman, and that in Geography by Mr. H. T. Burr, assisted by Mr. F. M. Wilder. Professor Shaler gave some lectures in the former course.

By far the most important event of the year, and one of the most important events in the history of this Department, was its removal to the new southwest corner of the Museum, which has been provided, through the generosity of Mr. Alexander Agassiz and of members of his family, to serve as the future home of the Department. The building was occupied during the second half of the academic year, and now all the courses in Geology and Geography, excepting those in Mining and Economic Geology and in Palaeontology, are given in the new corner-piece. In these new quarters, with abundance of room for instruction and for the storage of materials, and with many more conveniences of all kinds than it was

possible to have in the more crowded quarters of the Museum of Comparative Zoölogy, where the Department has been so hospitably provided for during the past twelve years, the officers of the Department have found that their own work, and that of their students, is being done far more systematically and far more effectively than ever before. It is impossible to overestimate the value to the Department of the new Geological wing of the Museum.

In the basement of the new building there are ample quarters for unpacking, preparing, and storing specimens; for modelling and for similar work; a dark room for photographic uses; and a room for the electrical apparatus. On the first floor there is a spacious lecture room, one of the largest in the University, provided with ventilation which can be regulated by the lecturer on the platform, and with other conveniences. A professor's room leads out of the lecture room.

On the second floor a large corner room has been fitted up for the use of elementary and advanced courses in General Geology. This room contains laboratory tables, each accommodating six students, and provided with trays for materials and for note-books. The present equipment affords accommodations for sixty-four men at once. Other tables, arranged in front of the instructor's platform, serve as desks for twenty or more students in the advanced courses. A large map case with trays for flat maps, and a covered top for rolled maps, and a specimen case containing over four hundred shallow trays, are among the new furnishings provided for this laboratory. A smaller room adjoining the laboratory is for the use of the Assistant Professor of Geology, and also contains accommodations for small classes.

The third floor is devoted to the Exhibition Rooms, which, when open, will form an important part of the public exhibition rooms of the whole Museum.

The fourth floor is devoted to Physiography, Meteorology, and Climatology. Here there is a large laboratory, similar to that on the second floor, for use in the elementary courses in Physiography and Meteorology. There are two smaller rooms, which are to be used as lecture rooms for small classes, and in which the laboratory and lecture materials in Physiography and Meteorology are kept. A private room is also provided for the use of the Sturgis-Hooper Professor of Geology.

On the fifth floor a lecture room and laboratory are devoted to Experimental and Dynamical Geology, and a large corner room is provided with twenty-four separate desks, at which individual

advanced students may do their work, with their books and specimens at hand, under the most favorable conditions of light and of quiet.

Altogether, few, if any, geological departments have such spacious, convenient, and attractive quarters as those now provided for the Department of Geology and Geography of Harvard University.

Professor Shaler's courses have been continued along the same lines as in previous years.

Professor Davis has given two courses during the past year, — the advanced course in Physiography (Geology 20) and the half-course on the Physiography of Europe (Geology 7). The topics studied in the former included river terraces, the historical development of the study of curve lines and of rivers, and the method of treating systematic geography and regional geography. The manuscript of an article on "River Terraces in New England" has been completed for publication in the *Bulletin* of the Museum, and an abstract of it has appeared in the *American Journal of Science*. Essays have been prepared on "Systematic Geography" for the general meeting of the American Philosophical Society in Philadelphia, in April last, and on "Progress in Teaching Geography" for the National Society for the Scientific Study of Education. A broader opportunity for field work for advanced students has been felt to be so important that a fund was secured by the kind aid of some friends of the Department of Geology and Geography sufficient to take two students, Mr. E. Huntington, Graduate, and Mr. J. W. Goldthwait, '02, on an excursion to Utah and Arizona, where a special study was made of a region adjacent to the great Hurricane Fault. Advantage was taken of this excursion by Professor Davis to review some of his previous observations in the Grand Canyon region, to examine some of the fresh water Tertiary formations of the Rocky Mountain region, and to visit some of the young block mountains of southern Oregon.

Professor R. T. Jackson gave the usual laboratory course in General Palaeontology (Geology 14a) to sixteen students. The course in Historical Geology (Geology 15) was taken by one student, and the course in Advanced Palaeontology (Geology 24) was taken by one student during the first half-year. The palaeontological collections and equipment are in good condition. A new Bausch and Lomb microscope stand was purchased. A considerable portion of the annual appropriation for Palaeontology was spent on cases, etc., these expenses being the result of certain rearrangements made when the remainder of the Department of Geology and Geography moved

into the new building. The Department is indebted to Mr. J. L. Pultz for some very good fossils from the Palaeozoic of New York State.

Professor Ward conducted the elementary half-course in Meteorology (Geology *B*); an intermediate course in Meteorology (Geology 1); and two half-courses in Climatology (Geology 19 and 25). Course *B* was also given to thirteen Radcliffe students. A number of important additions were made to the laboratory materials, and a new standard mercurial barometer and a Robinson cup anemometer were purchased. During the last half-year much time was spent in classifying and rearranging the meteorological and climatological books and laboratory materials in the new building. All the collections are now much more accessible than ever before. On the roof of the new Geological Section of the Museum there has been provided a small platform, on which it will be possible to expose some of the ordinary meteorological instruments, and from which observations of clouds, etc., can readily be made. As soon as the necessary funds are available, it is proposed to install a complete set of the ordinary meteorological instruments, partly upon this platform and partly in the window shelter on the fourth floor. Thus the students in meteorological courses may be given some instruction in instrumental work, which has up to this time been impossible, owing to lack of facilities in the quarters previously occupied. Professor Ward has continued his work on the translation of Hann's "Handbuch der Klimatologie," which is now in press.

Professor J. B. Woodworth gave instruction in Elementary Geology (Course 5) to 164 students. He was assisted by Messrs. Woodman, Goldthwait, Gale, Hunt, and R. M. Brown. The advanced course in General Geology was attended by twenty students. A half-course in Glacial Geology was taken by three students, and one student worked under Professor Woodworth's direction in Course 23, on the moraines at West Gloucester. A half-course of lectures was given to thirty-four students in Elementary Geology in Radcliffe College, and a half-course of laboratory and field work was given to three Radcliffe students. The field work in the latter course was conducted by Mr. Woodman. Professor Woodworth also gave Geology 8 to three students in Radcliffe College. Professor Woodworth was engaged during the year in a continuation of his investigation of the Pleistocene geology of the Hudson and Champlain valleys, under the auspices of the New York State Museum. In July, 1902, he took up the detailed study and mapping of the glacial and so-called Champlain deposits of the Moore quadrangle in

that State. At the request of the State Geologist of New York, Professor Woodworth in July addressed the Appalachian Mountain Club at Green Island, Lake George, on the geology of the Adirondack region. In the spring an address was also given before the Fall River Natural History Society on the geology of southeastern Massachusetts and Rhode Island.

Dr. T. A. Jaggar conducted, as usual, the course in advanced geological field work (Geology 22). Owing to the increased number of mining students, the course for the second time doubled its attendance, to a total of eighteen men in 1901-02; one of these left college in the middle of the year. The class made a geological survey of the whole Boston area, using new maps furnished by the United States Geological Survey. In order to make the work of so large a class efficient, the system of field work, notes, collections, and reports was improved in various respects, and much of this improvement was planned and carried out by Mr. La Forge, who acted as Assistant in the course. Mr. La Forge continued his own field studies on the dikes of Boston and vicinity. The new laboratories on the fifth floor of the Geological wing of the Museum were fitted up during the spring with accommodation for twenty-four advanced students and with devices for draughting and storing collections. The apparatus used in Experimental Geology has been placed temporarily in the south room on this floor. On May 12th Dr. Jaggar was given leave of absence to accompany the Relief Expedition of the United States Steamer "Dixie" to Martinique. Dr. Palache kindly volunteered to finish the remaining lectures in Geology 9 and its equivalent in Wellesley College, and the completion of the work in Geology 22 was superintended by Mr. La Forge. Dr. Jaggar remained in the West Indies two months and a half, returning to the United States July 28th. Collections were made for the Museum on the slopes of the volcanoes Pelée and Soufrière in Martinique and St. Vincent, and a valuable collection of relics from St. Pierre was presented to the Museum by the government of Martinique. A large specimen of volcanic bomb from Mont Pelée, collected by Mr. G. C. Curtis, has also been secured for the Museum. Mr. Curtis was associated with Dr. Jaggar in the West Indies.

Mr. Read gave the course in Elementary Physiography to sixty-six students, and acted as Assistant in Courses 4, 14, and 14a. He went abroad in the summer of 1902, to continue his work for the degree of Ph.D. at Munich, under Professor von Zittel.

Mr. Woodman acted as Assistant in Courses 4, 5, and 8, and in Courses 5a and 5b in Radcliffe College. He also gave a course in

Glacial Geology (Geology 16) at Radcliffe, and gave part of his time to the care of the Gardner collection of photographs. Mr. Woodman continued during the year to systematize the data he had collected on the gold-bearing slates of Nova Scotia, and in June, 1902, received the degree of S.D. in geology, the title of his thesis being "Geology of the Moose River Gold District, Halifax County, Nova Scotia; together with the Pre-Carboniferous History of the Meguma Series." Mr. Woodman resigned his position as Assistant in Geology in July, to accept the Assistant Professorship of Geology and Mineralogy at Dalhousie College, Halifax, Nova Scotia. The special task has been assigned him of building up a mining school at that institution.

The following publications by officers of the Department were issued during the year:—

By W. M. DAVIS:—

Elementary Physical Geography. Ginn & Co., Boston, 1902.

Baselevel, Grade and Penplain. *Journ. Geol.*, x, 1902, pp. 77-111.

Les Enseignements du Grand Canyon du Colorado. *La Géographie*, iv, 1901, pp. 339-351.

The Terraces of the Westfield River, Massachusetts. *Amer. Journ. Sci.*, xiv, 1902, pp. 77-94.

Field Work in Physical Geography. *Journ. Geography*, i, 1902, pp. 17-24, 62-69.

The Progress of Geography in the Schools. *Year Book Nat. Soc. Sci. Study of Education*, i, 1902, pt. 2, pp. 7-49.

Systematic Geography. *Proc. Amer. Phil. Soc.*, xli, 1902, pp. 235-259.

By R. DEC. WARD:—

Some Economic Aspects of the Heat and Drought of July, 1901, in the United States. *Bull. Amer. Geogr. Soc.*, xxxiii, 1901, pp. 338-347.

Physiological Effects of Diminished Air Pressure. *Science (N.S.)*, xiv, 1901, p. 814.

Eine Wichtige Studie über Sonnenfinsterniss-meteorologie. *Naturwissenschaftliche Rundschau*, Braunschweig, xvi, 1901, pp. 481-482.

Iridescent Clouds. *Science (N.S.)*, xvi, 1902, pp. 32-33.

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ROBERT DE C. WARD, *Chairman.*

## THE PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY AND ETHNOLOGY.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR, — Continuing from previous reports the record of the results secured by the subscription fund for research in Mexico and Central America which is maintained by a few generous patrons of American research, I have the pleasure of making the following brief statement: Early in the year, Mrs. Nuttall's explanatory pamphlet or Preface to the Ancient Mexican Manuscript, referred to in my last report, was printed. A limited edition of this costly work was issued under the title of the Codex Nuttall, in acknowledgment of Mrs. Nuttall's attainments in Mexican Archaeology and her indefatigable researches that resulted in her finding the long-lost manuscript which the Museum has published in fac-simile. In her elucidation of the Codex—so far as the limits of the explanatory preface permit—Mrs. Nuttall calls attention to its close resemblance to the Vienna Codex, and makes a short comparative study of the two codices; she discusses the year-signs and the day-signs; and gives suggestive translations from the picture writing relating to the history of "Eight-Deer, the Conqueror" and of "Lord Eight-Ehecatl" and "Lady Three-Flint." In her closing remarks she makes the statement that "the Codex constitutes a most interesting and instructive demonstration of a transition stage in the evolution of native writing," where the events are portrayed by pictorial presentation, and the names of persons and localities are definitely recorded by rebus signs.

Mr. Gordon finished his report on "The Hieroglyphic Stairway at Copan," and it has been printed and issued as the sixth and concluding memoir of Volume I of the Peabody Museum Memoirs. This volume has been completed by the publication of the table of contents and a full index.

Mr. Gordon's report is divided into (1) a description of the architecture of the Stairway, and (2) a study of the hieroglyphic inscription on the face of the steps. Mr. Gordon has since continued his study of the inscription and has published two papers on the subject, namely, "On the Interpretation of a certain group of Sculptures at Copan," in the *American Anthropologist* for January-March, 1902;

and "On the use of Zero and Twenty in the Maya Time System," in the same journal for April-June, 1902.

The Museum has photographs and moulds of all the hieroglyphs and sculptures on the Stairway, and we are awaiting the time when the much needed large hall shall be added to the Museum in which to exhibit in a suitable manner the casts of this remarkable series of hieroglyphs, as well as many other casts of Central American sculptures obtained by the Museum expeditions.

Mr. Teobert Maler has continued his researches in the Usumasinta Valley. The report on his explorations at several ancient sites, particularly of the extensive ruins of the old city of Yāxchilan, is now in type and will soon be issued. It will complete Volume II of the Museum Memoirs. We have every reason to believe that Mr. Maler will make many more interesting and important discoveries in relation to the history of the mysterious ruined cities in that region.

Mr. Edward H. Thompson has continued his researches in Chichen-Itza and his special studies of the sculptures and mural paintings of the ruined buildings of Yucatan. He has sent us plans of structures, photographs and moulds of sculptures and copies of mural paintings which we hope soon to publish. Mr. Thompson's special work is still at Chichen-Itza, where he is continually making new discoveries of great interest.

In connection with the researches in Yucatan the Museum is greatly indebted to Miss Adele Breton for coloring several of the folio plates in Maudslay's volume from her copies of the colored sculptures at Chichen-Itza. Miss Breton is an English lady who has for several years been travelling in Mexico in order to study the ruins; and probably no one person has seen more of these ancient ruins than she. An excellent artist, she has made many sketches of the ruins and sculptures and has paid particular attention to the paintings on the walls and to the coloring of sculptures in Yucatan. We have thus secured by her kindness the correct coloring of many of the sculptures of Chichen-Itza, of which we have casts, and are thus able to appreciate the importance of color in the ancient art of the people.

The Museum has secured by purchase, through the gift of Miss Mary L. Ware, two ancient manuscripts of special interest. One of these is a pictographic rendering of Catholic teachings to the Mayas; and the other is a manuscript going back to the sixteenth century, partly in Maya and partly in Spanish, in which is given a genealogical tree of the Tutul Xius, the royal family reigning in Yucatan at the time of the Conquest.

Mr. A. M. Tozzer, a graduate student in the division of American Archaeology and Ethnology, after his return from the Navajo country, prepared an account of the nine days' ceremony of the Night Chant, which he had the good fortune to witness through all its phases. He has made for the Museum a copy of one of the singular sand-paintings that was used during part of the ceremony. It is interesting to note that one of the sand-paintings which Mr. Tozzer saw made by the Indians, and which he copied in detail, proves to be an exact reproduction of a sand-painting that Dr. Washington Matthews copied during the performance of this same ceremony, over twenty years ago, in a distant part of the Navajo country. In both instances the painting was made by the Indian medicine-man and his assistants, entirely from memory; and yet, over twenty years later, two hundred miles away from where Dr. Matthews' painting was made, the complicated figures required for this particular part of the ceremony—and there are several distinct sand-paintings executed during the nine days and nights—were reproduced in every detail of form and color by a different set of Navajos. This is a remarkable instance of the persistence of the details of a ceremonial which originated untold generations ago and has probably occurred annually for centuries without deviation in the essential parts of its impressive performance.

An evidence of the increased interest in American research is the establishment of a Fellowship by the Archaeological Institute of America. Mr. Tozzer was appointed to this Fellowship in December, 1901, and shortly after the appointment he started for Yucatan where he remained until April. His plan is to study the Maya people and their language, with the hope that by such a course of research some clue may yet be found, among the Mayas or related peoples, to the ancient hieroglyphic inscriptions of Mexico and Central America. Mr. Tozzer is to return to Yucatan to continue his researches during the coming winter.

My own time has been so taken up with duties at the Peabody Museum and at the American Museum in New York, in preparing for the International Congress of Americanists, that I was not able to take the field in person during the past season. Mr. Willoughby's illness prevented him from making an exploration that we had planned, and this had to be postponed to another season. I was able, however, to send Mr. D. I. Bushnell, Jr., and Mr. W. C. Farabee to make an exploration of an important site in Missouri. This expedition was carried on jointly for the Peabody Museum and the Department of Anthropology of the University of California, and

was made possible on the part of the Museum by the gift of Mr. Clarence B. Moore, and by the generous patronage of Mrs. Phoebe A. Hearst on behalf of the University of California. This expedition has been successful in obtaining material from an ancient village site where pottery vessels of great size were found.

Mr. Bushnell, who has joined our corps of workers, has for several years been engaged in explorations in Missouri as well as farther north, and he has presented to the Museum a large number of specimens of pottery, stone implements and other objects which he obtained during his former explorations. Among the specimens is one of the singular sculptured human foot-prints on the limestone rock near the famous Mastodon bone-bed in Missouri. The possession of this interesting specimen is of importance for further study in connection with similar "foot-prints" in other parts of North America.

Mr. Bushnell has prepared for the Museum an accurate model in plaster of the great group of mounds in the Mississippi Valley known as the Cahokia Group, which contains the largest earth mound in the United States. In the twelfth report of the Museum, I gave an account of this mound on my return from a visit to it in 1879. At that time it was in danger of being destroyed, but until now it has withstood the demands of utilitarians; and I must again express the hope, which I have expressed before on several occasions, that this great monument, covering an area of nearly twelve acres, may be preserved for all time. The Cahokia Mound, as I said in 1879, bears very nearly the same relation to other mounds of the Mississippi Valley as the Great Pyramid bears to other monuments of the Nile, while its resemblance to the Teocalli of Mexico makes it of special importance for our understanding of American archaeology. Mr. Bushnell's model of the group will aid in showing the importance of preserving at least a portion of the group as an Illinois State Park or as a National Park.

Dr. Charles Peabody, with the assistance of Mr. Farabee, has continued his explorations of mounds in Mississippi, of which mention was made in the last report. He has brought to the Museum a very interesting and important collection from that little-known region.

The incomes of the Huntington-Frothingham-Wolcott Fund and of the Henry Warren Fund were not used during the past year, as the money was reserved for archaeological exploration that I hoped to conduct in person. It is anticipated that these incomes with those of the present year, to which may be added the income of the new fund of \$5,000 established by the bequest of Mrs. S. D. Warren,

in January last, will be expended in archaeological work in the United States. The Museum has several very important collections from the ancient mounds and village and burial sites in various parts of the country; but there are other regions which are equally important in order to secure a representation of North American archaeology, and this work must be done without delay as the opportunities for exploration are rapidly passing away.

Mr. Farabee will soon publish the results of his interesting investigations among the members of a family in Pennsylvania several of whom lack the normal number of bones in the fingers and toes. By the assistance of a friend of the Museum I was able to have him visit the family and make a study of this peculiarity in relation to its bearing on heredity.

Early in the spring I took a party of students in the Division to examine the singular system of ancient ditches, earth embankments, and stone walls in and near the town of Millis in this State. These singular structures are several miles in extent and are of unknown origin. Several years ago I made a hasty examination of the place, and it seems impossible to regard the walls and ditches as the work of the early white settlers, since no purpose for such elaborate works can be discovered. There is no tradition or history to be found relating to them, except that the "oldest inhabitants" state that they were there when their fathers settled in the region. Mr. George A. Young of Millis, who has given much time to following out the complicated system of walls and ditches which pass over hills and through dales, kindly accompanied our party and took us to interesting points for observation. The place is worthy of extended investigation, and a careful exploration should be made of certain areas that may have been ancient sites of habitation. A survey and plan of the whole complicated system should also be made, that these strange works, whether prehistoric or historic, may be fully understood.

Miss Alice C. Fletcher, the holder of the Thaw Fellowship, has completed her monograph on a Ponca Ceremony which is about to be published by the Bureau of Ethnology. During the winter she gave a lecture before the Harvard Anthropological Society, on "Totemism and Animism in the light of modern research."

During the absence of Dr. Russell, the courses that he would have carried on were given, in connection with other courses in the Division, by Drs. Wood and Dixon, Mr. Huxley and Mr. Farabee and myself. Dr. Russell, during his absence, was attached to the Bureau of Ethnology. He made important ethnological and archaeological researches in Arizona, the results of which will be published by the

Bureau. I am glad to record that he returned with renewed health and strength in time to resume his regular class instruction for the year 1902-03. Several changes in the courses given under this Division of the University have been made for the year 1902-03, by which Drs. Russell and Dixon offer two full courses and four half courses open to undergraduates. As noted in former reports, the name of the Division, American Archaeology and Ethnology, in which a general course in Anthropology is given as well as courses in several branches of Anthropology—of which American Archaeology and Ethnology is but one—should be changed to the more explanatory and comprehensive term, Anthropology.\*

The recent activity of the Museum in publishing several important papers, containing the results of original research, has brought us into a position of equality with other institutions publishing memoirs and papers, and we have limited the distribution of our publications to exchanges for the publications of other institutions and to such individuals as are engaged in similar special research to whom we are indebted. The publications of the Museum are also for sale, and several libraries and individuals are regular subscribers for all we issue.

The total addition, for the last college year, to the Museum library is 131 volumes and 97 pamphlets. Among these are several important and valuable volumes presented by Messrs. C. P. Bowditch and Clarence B. Moore and the Duke of Loubat. The Zoölogical Department of the University Museum has transferred additional volumes to our library during the year. There are now in the library 5,477 volumes and pamphlets in the various branches of anthropology.

In addition to the money contributed by Mr. Bowditch and Mr. Salisbury, and received by Mr. Bowditch from several other patrons, for research in Mexico and Central America and for the publication of the Memoirs,—a fund which is managed by a special committee and does not appear on the Treasurer's books,—we have received the gift of \$500 from Mr. Clarence B. Moore for exploration in the United States; an anonymous gift of \$100; two annual gifts of \$25 each from Mrs. N. E. Baylies; the gift of \$500 from Miss Mary L. Ware, toward the payment of a salary; and the gift of \$9 from Dr. R. B. Dixon, for binding certain periodicals which are needed for reference by the students.

For gifts which have added especially to the importance of the collections, we have to thank Mrs. George Linder and her brother,

\* I am pleased to state that since this report was written the Faculty of Arts and Sciences has voted to change the name of the Division to Anthropology.

Mr. Lewis H. Farlow, of Boston, for a large and valuable collection of baskets from many Indian tribes. The collection given by Mrs. Linder was chiefly brought together when she was in California a number of years ago, and contains many fine old baskets made by the Pomo and Ukiah Indians, whose old work ranks with the best basket-making in the world. Several of these baskets are ornamented by the interbraiding of brilliant feathers and with pendants of abalone shell. There are also in the lot rare old examples of basketry of the Tulare, Maidu, Mono, and Pima Indians of California and Arizona; also of the Alaskan and Thompson River Indians. Mr. Farlow's gift of one hundred and twenty equally valuable baskets from widely distributed tribes comprises several specimens of the rare old grass baskets of the Aleuts; cedar root baskets from Alaska; a remarkably fine lot of storage and carrying baskets of the Lillooet and Thompson River Indians; berry and burden baskets of the Puget Sound Indians and of other tribes in Washington and Oregon; a finely made feathered sun basket from the Ukiah Indians of California; feathered treasure baskets from the Pomos; gambling plaques with full sets of dice from the Tulare and Washo Indians, basket bowls, water carriers, sifting trays, and burden baskets from several tribes; basket cradles from the Pomos, and a series of baskets from the Pimas, Apaches, Utes, and Navajos. These two collections comprise a lot of old and rare basketry that could not now be secured from the Indians, and when these baskets are placed with other objects from the several tribes they will greatly enhance the importance of our ethnological exhibits. Mrs. Linder has also given to the Museum a beautifully beaded Siouan garment.

From the Field Columbian Museum we have received an instructive collection secured by Drs. Dorsey and Phillips from the prehistoric flint quarry at Mill Creek, Ill. This collection of quarry material is a duplicate of one made for the Chicago Museum to illustrate the manufacture of the large flint implements commonly regarded as agricultural.

Dr. C. C. Abbott has sent to us from Trenton a series of Indian potsherds illustrating experiments on the changes that take place by submitting the pottery to different degrees of heat.

Mr. Frank M. Whipple has given a long copper bead found in an Indian grave near Fall River, which is of interest from its resemblance to the so-called armor found with a skeleton near Fall River many years ago, to which reference was made in a former report.

Miss A. L. Alger of Boston has presented several specimens of pottery vessels, figures, and whistles from Honduras. Dr. L. C.



Jones of Malden has given several terra-cotta objects from Egypt and Mexico.

From Mr. L. Bradley we have received two objects of stone from eastern Massachusetts; from the Boston Museum of Fine Arts, a stone pestle and several terra-cottas from Honduras; from Mrs. Mary E. S. Stevens of Cambridge, a tracing of a rock carving on a cliff at San Jacinto, Cal.; from Miss Margarette W. Brooks, the specimens of fish-hooks made of bone which she found several years ago in a shell-heap near Narragansett Pier; from Mr. R. M. Goode, an ornamented implement made of bone from a cliff-house at Oak Creek, Arizona.

Reference has already been made to the collection presented by Mr. D. I. Bushnell, Jr., from mounds in Missouri and Arkansas, and I have to record also as gifts from him, an Eskimo kayak with full sealing outfit from Kotzebue Sound, and a beamer and scraper of hafted stones used in modern times for dressing skins near Florence, Italy.

Mr. Clarence B. Moore, who has invariably remembered the Museum when on his archaeological expeditions, sent us one of the singular compound pottery vessels with five compartments of which he secured several of varying forms during his explorations near Apalachicola, Fla. We have received from Mr. Moore a copy of his report on this most recent of his explorations. Mr. Moore was so fortunate in this exploration as to find a large group of pottery vessels of entirely new forms. In fact, so many new forms were discovered that it seems almost like a distinct phase of culture that he has discovered. Mr. Moore has also sent us five casts of interesting and rare types of stone implements found during this exploration. He has also given us specimens of charred cloth found in the Van Meter Mound in Pike County, Ohio, in 1894.

Dr. Alexander Agassiz, during his recent expedition to the Maldivé Islands, collected a representative ethnological collection, including garments, mats, ornaments, utensils, implements, weapons, and games, and has presented it to the Museum as an addition to our ethnological exhibit, which he has done so much to increase when on his various expeditions.

The numerous additions to the collections have been catalogued and cared for by Mr. Willoughby. The series of photographs, grouped in frames on the walls of the Warren Ethnological Gallery, illustrating the various peoples, their customs and habitations, has been prepared by Mr. Willoughby and forms an admirable and instructive adjunct to the collections in the gallery which illustrate

the arts and customs of the several peoples. He has also made considerable progress in the arrangement and labelling of the collections on exhibition. It is, however, impossible to arrange the valuable and numerous collections in the strictly ethnographical manner— which must always be the predominating principle of arrangement — or to make certain special illustrative exhibits, which I have long had in mind, until the completion of the Museum building gives the room so much needed. \$150,000 is required for this addition to the building which would complete the quadrangle of the University Museum and thus bring its several departments into closer contact.

F. W. PUTNAM,

*Peabody Professor and Curator of the Museum.*

## THE SEMITIC MUSEUM.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,— It is a great satisfaction to be able to state that the Semitic Museum has now been completed. The structure is spacious and convenient, and combines in a pleasing way solidity with sobriety. The cost of the building, including furniture and cases, has been about \$80,000. This represents gifts amounting to \$76,000 from our generous patron, Jacob H. Schiff, Esq., and accrued interest of about \$4,000. The building is strictly fire-proof. May it stand for many generations, a beautiful memorial to the wisdom and philanthropy of its founder!

The ground floor of the Museum contains three lecture rooms and the library. The lecture rooms, seating 12, 50, and 165 persons respectively, are unusually comfortable. They furnish ample accommodation for all the Semitic courses of instruction, and will no doubt by degrees prove attractive to instructors in other departments. In the summer of 1902 the large lecture room was used by the Summer School of Theology, and gave general satisfaction.

The second floor contains the Curator's room, and an exhibition room about 80 × 50 feet. The latter is the Assyrian room, and in it will be exhibited the casts of Assyrian, Babylonian, and Hittite bas-reliefs and monuments, also the seals and other original objects of Babylonian-Assyrian origin. There are four wall cases, each about 33 feet long, and six other cases 20 feet long, the latter divided lengthwise by partitions, thus making two of each. The casts, which almost fill these cases, represent many of the most interesting monuments in the Museums of London, Paris, Berlin, and Constantinople.

In the Assyrian room are also four table cases, about 10½ × 5 feet, with cupboards underneath. In these cases will be exhibited the small Assyrian-Babylonian objects, mainly originals, in clay and stone, especially the inscribed tablets and the cylinder seals. In this room will also be placed the separate cases containing individual objects in the round. Two of these pieces are so large that it may be necessary to place them on the top floor or in one of the halls.

On the third floor is a small room which for the present will be used as a working room, but which may hereafter be used for

exhibits. Here is also the Palestinian room, of the same dimensions as the Assyrian room below. To accommodate tall objects and for better lighting, the middle portion of the ceiling has been made higher than the rest, and provided with a sky-light. The general arrangement of cases is the same as in the Assyrian room, though the double cases are not so long. There are about enough for immediate needs and space for more when the need arises.

This room will contain the objects from Palestine, Arabia, Egypt, Phoenicia, Syria, and Persia. From Arabia we have manuscripts, inscribed stones, and Bedouin objects; from Phoenicia, inscriptions and glass vases; from Syria, geological specimens, glass vases, and Bedouin objects; from Persia, casts of bas-reliefs and inscriptions. Of Egyptian objects we have a considerable number acquired by gift and by purchase, and there is a collection of about one hundred numbers deposited with us by Rev. Dr. E. E. Hale. We have also on deposit some fine scarabs and beads which are part of a large collection. The owner offers the collection for sale, and we should be fortunate if some friend would buy it for the Museum.

The chief interest of this room will be the objects from Palestine. In addition to the several collections acquired by purchase at various times, we have the considerable collection bought in 1898 from Dr. Selah Merrill by Alumni and friends of the Divinity School.

The objects illustrate both ancient and modern Palestine. Ancient Palestine is represented by pottery, glassware, and coins; modern Palestine by manuscripts, pottery, costumes, utensils, jewelry, musical instruments, and specimens of the fauna, flora, and geology of the land.

It is hoped that the work of arranging the collections may be completed early in the year 1903, after which the Museum will be open to the public. All the material illustrates the instruction given in the department, some of it may be made the basis of original study, and much of it will be of interest to the general visitor.

Of the gifts received during the year the following may be mentioned: From Mr. A. M. Lythgoe, '92, a collection of Egyptian antiques; from Simaika Bey, of Cairo, a manuscript of the Coptic New Testament; from Theodore M. Davis, Esq., of Newport, from whom a gift was announced in my last report, two Egyptian mummy-cases, also a canopic jar and other objects from his excavations in the Valley of the "Tombs of the Kings"; from Gray Hill, Esq., of Jerusalem, a small stone sarcophagus, a clay lamp, and portions of a stone bust; from J. Paulus, Esq., of Jerusalem, entomological specimens; from Dr. Selah Merrill, U. S. Consul at Jerusalem, a

collection of modern pottery, some thirty models in stone, and several dozen antique lamps in clay; from the Syrian Protestant College, Beirut, through Professor A. E. Day, a case of the rocks and fossils of Lebanon. Our thanks are due to all these benefactors, and also to Baron von Bissing, J. E. Quibell, Esq., and Simaika Bey, for valuable aid in connection with purchases made in Cairo. It is also a pleasure to state that Dr. Reisner intends, with Mrs. Hearst's approval, to send us a collection of pottery from his excavations in Upper Egypt.

The acquisitions of the year by purchase include Arabic manuscripts from London and Cairo; Assyrian casts from the British Museum; photographs from Rome and Luxor; musical instruments in Egypt and Palestine; inscribed stones, bronze statuettes, a funeral boat, and ritual utensils in Egypt; and in Palestine, Beirut, and Damascus a great variety of objects in glass, pottery, clay, wood, copper, silver, and woven stuffs, illustrating both ancient and modern life. I brought home also some five hundred photographs taken during my stay of five months in Egypt, Palestine, and Syria.

The cost of the objects bought was about \$5,500. Payments were made from the moneys contributed in 1899. Some \$13,000 of that contribution still remains for further purchases. Negotiations now in progress may reduce this sum by about \$2,000.

My recent visit to European museums and to the Orient has deepened the conviction that our future growth by methods hitherto pursued must be slow. As to casts, we have nearly reached the limit. Most of the Semitic antiques offered for sale are bought up by tourists, private collectors, and the museums of Europe, while the widespread interest in the subject has greatly increased the market price. Furthermore, the difficulty of getting information as to *provenance* and circumstances of discovery is a serious drawback in regard to antiques acquired by purchase. The only satisfactory way to obtain such objects is to dig them out of the ground.

I should like, therefore, to urge again, as I did a year ago, that we ought to enter the field of exploration, and I refer once more to what others are doing. The Germans are displaying extraordinary activity under imperial and parliamentary patronage, and no less active in our own country are the Universities of Pennsylvania and California. The excavations carried on in Babylonia by the University of Pennsylvania, resulting in so much renown to that institution and in great additions to our knowledge of antiquity, have been supported chiefly

by a few friends of the University in Philadelphia, while the successful work in upper Egypt, conducted by two sons of Harvard, G. A. Reisner and A. M. Lythgoe, for the University of California, is paid for by Mrs. Phoebe Hearst. The latter undertaking, now in its fourth year, has cost some \$10,000 annually, and is so satisfactory that Mrs. Hearst is planning to continue it on a larger scale.

In Palestine the English and the Austrians have been digging this year, and the Germans are preparing to do the same. The English work at Gezer, begun last June, gives promise of results of unusual value. The Germans have also done important excavation in the Temple of the Sun at Baalbek, and are now engaged in exploring the palaces and Temples of Babylon.

The times are ripe, and we may now accomplish what in a few more years will be impossible. Professor Maspero, director of the Cairo Museum, estimates that in twenty-five years, at the present rate, the work of discovery in Egypt will be over. The promising sites in Palestine are not numerous and are gradually growing fewer. Even in Babylonia the store of tablets and antiques is not inexhaustible.

These three fields, Egypt, Palestine, and Babylonia, offer great attractions. The advantage of Egypt is that the explorer enjoys every facility, and that valuable discoveries are inevitable. A distinct and important branch of the work here is the recovery of Greek papyri from the Fayoum. These papyri, chiefly from the Ptolemaic era, are of consequence to classic and Semitic students no less than to Egyptologists. Many hundreds of them have been obtained by the Egypt Exploration Fund and by the Hearst Expedition. The discovery this year by the German "Orient Gesellschaft" of a copy, written in the 4th century B.C., of a work by the lost Greek poet, Timotheos, encourages the hope of finding in Egypt very ancient copies of the Scriptures. Work in the Delta is much to be desired, as it would surely give new light on the times when multitudes of Jews were settled there two thousand years ago.

In the number and variety of objects awaiting discovery we cannot expect Palestine to be as fruitful as Egypt, but everything found in the Holy Land will have a special value for all who are interested in Hebrew history and in the Bible.

One of the greatest mines for Semitic antiques is, of course, Babylonia, and the few hundred thousand dollars spent in the exploration of this land seem insignificant in view of the magnitude of the results achieved.

Is it too much to hope that our friends will provide the Museum with the means of bearing a part in this great work of oriental research? The most satisfactory provision would be an endowment, the income of which, in whole or in part, should be used for this purpose. But until we have such endowment much can be accomplished by special contributions. If we could have ten thousand dollars a year for a three or a five years' campaign, there is no reason to doubt that the result would justify the wisdom of the expenditure.

D. G. LYON, *Curator.*

## THE FOGG ART MUSEUM.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—I have the honor to present the following report on the Fogg Art Museum for the year 1901–02.

Our accessions for the year are as follows: From Mr. E. W. Forbes, '95, as an indefinite loan, a view of the Simplon in water-color by J. M. W. Turner; a large panel in tempera, representing St. Jerome and two other figures, by Fra Filippo Lippi; a panel, Madonna and Child, bearing the signature of John Bellini; a small marble relief of later Greek workmanship, representing a horse and rider, and a Greek marble statue of Narcissus. From Mr. James Loeb, '88, as an indefinite loan, forty-two objects of Ancient Greek and Egyptian Art in bronze, terra-cotta, and gold, and two objects of Mexican and Peruvian Art respectively, all formerly in the collection of W. H. Forman, Esq., of Pippbrook, near Dorking, England, comprising nineteen small bronze figures including those of Heracles, Aphrodite, Hermes, Eros, and others, and two glass cinerary urns. Several Amphorae, and other Greek vases, and a number of gold ornaments and engraved stones. From Mr. Charles Fairfax Murray of London, three Greek vases, and eight drawings by Sir Edward Burne Jones. From Professor C. E. Norton, an ancient glass bottle, and an ancient terra-cotta figure; and from the Trustees of the Boston Museum of Fine Arts, a cast of the head of a youth from a Greek work in sculpture in the supposed style of Scopas.

To the Gray Collection of prints have been added ten prints of Turner's *Liber Studiorum* in the etched state as follows: *Inverary Castle*, *Jason*, *Hindoo Worshiper*, *Lauffenbourgh*, *Kirkstall Crypt*, *Hedging and Ditching*, *River Wye*, *Solitude*, *Glaucus and Scylla*, *Sheep-Washing*, and two plates of the same series in the mezzotint state, the *Hindoo Worshiper* (a first state), and the *Dumbarton* (this last is the property of the Department of Fine Arts deposited in the Gray Collection). We have also acquired for this collection a print from a niello plate by an unknown Italian engraver of the sixteenth century, a print from Dürer's engraving called the *Ravisher*, the complete work (first edition) by Richard Earlom after the *Liber Veritatis* of Claude Lorrain, comprising three hundred plates in etch-



ing and mezzotint; and, as a gift from Mr. Wendell P. Garrison, '61, an illustrated pamphlet by himself entitled *Holbein and John Bewick*, together with a series of reproductions of several of the original drawings by Holbein for his well-known *Dance of Death*, of the corresponding wood-cuts of the Lyons Edition of 1538, and of wood-cuts by John Bewick.

To the Randall Collection has been added a print from a metal engraving by Vitale, a gift from Mrs. F. D. Bergen.

To the library of the print department, by purchase from the income of the Randall Fund, the following works: *A Chronological Catalogue of the Engravings, Dry-Points, and Etchings of Albert Dürer*, by S. R. Koehler; *Traité historique et pratique de la gravure dans l'École de Rubens*, by Henri Hymans; a *Treatise on Wood Engraving* by Jackson and Chatto; *Whistler's Etchings, a Study and a Catalogue*, by Frederick Wedmore, and, by transfer from the College Library, *Catalogue Sommaire des gravures et lithographies composant la réserve (of the Bibliothèque Nationale of Paris)* by François Courbain.

We have purchased two hundred phototype reproductions of drawings by Rembrandt, but our resources have been so small that we could make practically no other additions to the collection of photographs, only twelve having been purchased during the year, and seven others were acquired by gift: three from Mr. W. C. Lane, two from the Soule Art Company of Boston, one from Mr. J. G. Kitchell, and one from an anonymous giver.

To the collection of slides 217 additions were made, comprising illustrations of Greek and Roman sculpture and architecture, Assyrian art, Greco-Roman painting, Mediaeval German, English, and French architecture, Italian and French architecture of the Renaissance, Modern Egyptian and English architecture, and Italian, English, Flemish, and German painting. Eleven of these were gifts from Rev. George Hodges, and five were given by Mr. C. E. Dawkins.

To the library of the Museum the following works were added: *Crowe and Cavalcaselle's New History of Painting in Italy*, 3 vols., and *Early Flemish Painters*, 1 vol., *Investigations at Assos (Expedition of the Archaeological Institute of America)*, Part I, a gift from Mr. Learned Hand, '93, *Catalogue of Sculpture in the Department of Greek and Roman Antiquities, British Museum*, 2 vols., *Lafenestre and Richtenberger, La Peinture en Europe—La Belgique, Florence, La Hollande, Venise*, 4 vols., and *Sterling's Annals of Artists in Spain*, 4 vols.

Our new acquisitions of original works of art are again all of high class. The water-color drawing by Turner is a fine and characteristic example of his mature style, and by hanging with it a small early drawing (belonging to the Department of Fine Arts), and a superb one of his middle period (loaned by Mr. Francis Bullard, '86, of Boston), we were able to give an instructive synoptical illustration of the development of Turner's genius. These drawings, together with the prints of the *Liber Studiorum* in the Gray Collection, and the larger works in oil color lately acquired by the Boston Museum of Fine Arts, have afforded an opportunity to study at first hand the artistic powers of this great modern master, such as has not before existed in this country. The Lippi and the Bellini panels are good examples of the schools to which they respectively belong, and both are in excellent condition, while the marble statue of Narcissus is a worthy companion to the beautiful Meleager and Aphrodite before acquired. The figure, like most others of Greek antiquity that have lately been brought to light, is badly injured by the loss of important parts. The nose, both legs below the knees, the right arm below the shoulder, and the left arm above the elbow are gone; but the fragment which remains is superb. The right arm was bent with the hand resting on the hip, the weight of the body is thrown upon the right leg, and the left arm rested on some support raising the left shoulder toward which the head is inclined. The pose is graceful, the anatomical development moderate, and the modelling large and fine in the highest degree.

The objects of the Loeb Collection of bronzes, vases, and ornaments are of equally high character. Obtainable Greek bronzes are very rare, and very costly, and this series will develop our working Museum in a new direction, while the vases of this collection are an important addition to our former acquisitions in this class of objects.

In making additions to the print collections we endeavor primarily to fill the most important gaps in the class of original works, that is, engravings by artists executing their own designs on wood and on metal—chiefly early German and Italian engravers, and modern masters like Rembrandt and Turner. Since the prints were returned to us from Boston we have been able to use but a small part of the income of the Gray and Randall funds for new accessions, as a large part of this income has to be devoted to the expenses of cataloguing and administration. We have, however, acquired a few valuable prints of both early and modern works. The series which we have chiefly enriched is that of Turner's *Liber Studiorum*. Of these unrivalled examples of modern landscape delineation we had, when

the Gray Collection came into our hands, only the greater part of the published plates in the mezzotint state. To these several additions have been made, and one important print of the unpublished series has been acquired. But of the seventy plates from which a few impressions were taken in the etched state, not one print was yet included. We have since taken advantage of every opportunity to secure as many of these etchings as we could, and the ten prints acquired during the past year bring the whole number in our collection up to twenty-eight, which includes some of the finest subjects of the series. The etchings of the *Liber Studiorum* are unique in character, and of great value. It is therefore desirable that we should, if possible, procure them all; but they are very rare, and very costly, and to get them all will probably take a long time, if it is ever possible.

Photographs were loaned to the Department of Architecture, the Boston Museum of Fine Arts, Wellesley College, and to several persons not connected with the University 250 times, and slides were loaned 51 times.

The number of visits for access to photographs was 1,289, of which 1,004 were by members of the University.

The number of visits to the print collections for examination of prints not displayed in the wall cases was 473, of which 402 were by members of the University.

The number of photographs catalogued was 416, and the number of slides 227. Of photographs belonging to the Department of Fine Arts 2,389 were accessioned. The attributions of paintings given by the dealers in photographs are often incorrect and contradictory, and we are therefore obliged to correct them as far as possible. This is time-consuming, and makes the work of preparing our subject lists slow. A subject list of paintings by galleries, filling 863 sheets, has been made during the year. The slide catalogue, filling 29 covers, is now complete as far as our accessions extend.

During the year 489 prints, and 338 photographs, of our own collections were mounted in our work-room, and work of the same kind was done by us for the Department of Architecture, the College Library, and a few outsiders. For this work we have received the sum of \$297.37.

The number of prints catalogued during the year was: of the Gray Collection (new accessions) 323, and of the Randall Collection 1,574. As explained in my last report, the work of cataloguing the prints is necessarily slow, since it calls for much comparison of prints, and consultation of authorities, and also because the work is

interrupted by the general work of administration which takes up a great deal of time. The same is true of the cataloguing and administration of the photographs.

The need for a suitable gallery where our paintings can be properly seen increases with the growth of our collection. This collection already includes examples of the Early Italian Schools of real importance, such as do not as yet exist elsewhere in the country, and it is a deplorable fact that these works cannot now be seen in any proper sense.

CHARLES H. MOORE, *Director.*

## MINERALOGICAL MUSEUM AND LABORATORIES OF MINERALOGY AND PETROGRAPHY.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—In the new southwest corner of the University Museum the Mineralogical Department has received two rooms on the second floor, used as an office and laboratory by the Curator, and the joint use of storage rooms, motor room, dark room, etc., in the basement. By doors cut through the wall these rooms connect directly with the Mineralogical Museum. The room formerly used as an office has been equipped as a dark room for the use of the goniometers and optical apparatus, and the adjacent larger room for an advanced laboratory.

The class in Elementary Mineralogy in 1901–02 numbered seventy-five, in Petrography twenty, thus approaching the limits of the lecture-room. Many additions to the work material were required for these large classes, and four new Bausch and Lomb petrographical microscopes were purchased.

The Museum received several gifts of minerals, among which may be mentioned: a collection of uncut gem minerals obtained by Mr. Alexander Agassiz during his stay in Ceylon, and a fine specimen of Lake Superior mohawkite from Mr. Agassiz; from Mr. Heber M. Beadle, a box of English minerals (fluorite, sphalerite, etc.); from Mr. Harry A. Lee, State Commissioner of Mines, Colorado, calaverite crystals; from Dr. W. S. Bigelow, quartz crystals. Through the good offices of Mr. C. L. Whittle the Museum purchased two noteworthy new finds: one comprised the contents of a granite druse discovered at Minot, Me., which contained about two thousand loose crystals of a superb purple apatite, besides several matrix specimens, the whole of which was acquired; the other, a suite of superb epidote crystals from a new locality in Alaska. Both were occurrences of new and type material which was subsequently described in the publications mentioned below. These important acquisitions illustrate what could be done with an adequate endowment by taking advantage of similar exceptional opportunities.

The following papers were published during the year:—

Epidote from Alaska. By CHARLES PALACHE. *Proc. Am. Acad. Arts and Sci.* (Also in German in the *Zeit. für Krystallographie.*)

Apatite from Minot, Me. By J. E. WOLFF and CHARLES PALACHE. *The same journals.*

Leucite-Tinguaite from Beemerville, N. J. By J. E. WOLFF. *Bull. Mus. Comp. Zool.*

JOHN E. WOLFF, *Curator.*

## RADCLIFFE COLLEGE.

TO THE PRESIDENT OF THE UNIVERSITY :—

SIR, — I have the honor to present my report on the condition of Radcliffe College during the academic year 1901–02.

The number of students in actual attendance during the year was 456, as against 457 during the preceding year.

Graduate Students . . . . .	51
Seniors . . . . .	64
Juniors . . . . .	58
Sophomores . . . . .	89
Freshmen . . . . .	78
Special Students . . . . .	<u>116</u>
Total . . . . .	456

At the Commencement in June, 1902, seventy-nine students, six of whom had not been in residence during 1901–02, received the degree of Bachelor of Arts. Ten students, who had not been registered as Seniors, received the degree, and one, who had been so registered, failed to receive it. Of the seventy-nine successful candidates, two received the degree *summa cum laude*; twenty-two received it *magna cum laude*; thirty-four *cum laude*.

Nineteen students received the degree of Master of Arts. Six of the nineteen had taken their first degree at Radcliffe; the others represented the following colleges: Acadia University, Bryn Mawr College, Colby College, University of Kansas, McGill University, University of Minnesota, Mount Holyoke College, University of Nebraska, Ohio State University, Smith College, Wellesley College.

The degree of Doctor of Philosophy was conferred upon

LUCY ALLEN PATON, A.M., and  
ETHEL DENCH PUFFER, A.B.

Lucy Allen Paton, A.B. Radcliffe 1892, A.M. 1894, Resident Graduate Student for four years, 1896–1900, took her degree in the special field of Philology. Her thesis, “Morgain la Fée,” received the Wilby Prize in 1900.

Ethel Dench Puffer, A.B. Smith 1891, Resident Graduate Student, University of Freiburg, 1896–97, Resident Graduate Student, 1897–98, took her degree in the special field of Psychology. Her thesis was “On Symmetry.”

The degree of Doctor of Philosophy was conferred by Radcliffe College for the first time. The requirements for the degree had been completed by Miss Puffer in May, 1898, and by Miss Paton in May, 1900, as stated in the Reports for those years. The conferring of this degree was the great academic event of the year.

Examinations for admission were held in June, 1902, in Cambridge and New York; in Albany, Bonn (Germany), Brookline, Buffalo, Butte (Mont.), Cleveland, Concord (N. H.), Exeter (N. H.), Milton, Portland (Me.), Springfield, St. Paul, Washington (Conn.), Worcester, and Youngstown (O.). They were also held in September in Cambridge. Three hundred and twenty-three candidates presented themselves for examination. Twenty were candidates for admission as special students; fifty-nine candidates took part of the examination or worked off admission conditions; five candidates were examined for advanced standing; one hundred and forty-six candidates took the Preliminary Examinations, and ninety the Final Examinations. Three Postponing candidates were rejected. The results of the Final Examinations are given in the following table:—

	Admitted.	Admitted "Clear."	Rejected.
June . . . . .	78	44	2
September . . . . .	10	2	0
Total . . . . .	88	46	2
Total rejected . . . . .	2		
	90		

Eighty-eight candidates were admitted as Freshmen in 1902, as against one hundred and sixteen in 1901.

Fifty-one Graduate Students registered during the year, thirty-six of whom were from other colleges. Twenty-five students were admitted to eleven full courses, and eighteen students to eight half-courses of the "Courses primarily for Graduates in Harvard University open to competent students of Radcliffe College."

- Semitic was taken . . . . . by four students.
- Classical Philology was taken . . . . . by three students.
- Government was taken . . . . . by one student.
- Philosophy was taken . . . . . by fifteen students.
- Education was taken . . . . . by fifteen students.
- Music was taken . . . . . by two students.
- Mathematics was taken . . . . . by one student.
- Geology was taken . . . . . by two students.

The number of courses offered in 1901-02 was 158½; they were offered by 109 professors and instructors in Harvard University.

The members of the Academic Board for 1901-02 were: Professors Byerly (*Chairman*), Warren, Mark, Wright, Macvane, Hall, von Jagemann, Grandgent, and Kittredge, and the President and the Dean of Radcliffe College.

The opening of the academic year was saddened by the death of Professor James B. Greenough, an Associate of Radcliffe College, and from the first a leader and truly "a great part" in the movement to which Radcliffe College owes its foundation. At the time of Mr. Greenough's resignation from active service, his Radcliffe students resolved to mark their grateful sense of what he had been to them and to the College by a gift to the Radcliffe Library of books such as he would have chosen, and they have raised for that purpose the sum of three hundred dollars.

At the Associates' Meeting in February, 1902, Miss Fanny Peabody Mason, of Boston, was elected an Associate of Radcliffe College without limit of term. At the meeting in June, 1902, Mr. Arthur Astor Carey, to the great regret of his colleagues, resigned his position as an Associate of Radcliffe College.

The interest in the health record of college-bred women is so general that it may be well to record here a striking fact in connection with the statistics of Radcliffe College. Up to December 30, 1901, Radcliffe College had not lost a graduate. Of the 415 women who had taken their A.B. degree or certificate between June, 1883, and June, 1901, the first loss was by the death of Katharine K. Wheeler, Mrs. George F. Swain, A.B. 1890. This first death has been followed in swift succession by two others: Clara Pomeroy Folsom (A.B. 1897) died March 20, 1902; Alberta Virginia Scott (A.B. 1898) died August 30, 1902.

Bertram Hall, our hall of residence, was not ready for occupation until the 18th of November, when the students took up their residence. The house was formally opened on the 22d of January. From the first day the hall has amply fulfilled the desire of the founder, that her gift should add to the welfare and happiness of the students and to the growth and development of the College. The house-warming was the first of many occasions on which the hall served the secondary purpose for which it was designed, by affording opportunity and a proper setting for the hospitalities of the College. The beautiful building, with the delightful prospect on which it looks, is already reckoned as one of the attractions of Cambridge to the stranger, and, a matter of far greater importance, it has met the kindly and generous approval of its neighbors in the widest sense, who have proved themselves its friends.



On the opening day the first step towards the building of a second dormitory was taken by Mrs. Emmerton, of Salem, who offered to give the sum of \$5,000 for that object. This project appeals directly to the graduates and friends at a distance, and it is the hope of the Dean that it may be primarily intended for graduate and older special students. To come into touch with the highest scholarship, and to attain modern ideals of equipment, a woman whose vocation is study must come to a great university, and for such students the opportunities offered by Radcliffe College are incomparable. The affiliation of the College to Harvard University, with all that it implies, the independence of Radcliffe as a College, the intellectual and social traditions of the past, and the kindling energies and purposes of the present mark the atmosphere of Cambridge and give a stimulus and an environment not to be found elsewhere. It is therefore somewhat surprising that the increase in the number of graduate students has not been large. It is perhaps in the nature of things that the number of advanced students should always be small, and that fewer women than men should be able to prolong their years of study. This is greatly to be regretted, in view of the need for highly educated men and women. One of the causes suggested for the slow rate of increase in the number of the graduate students is the supposed precariousness of the relation between Radcliffe College and Harvard University. This suggestion will hardly seem worth considering to one who has carefully studied the history of Radcliffe since its organization as a college. The intimate relations between the University and Radcliffe College are explicitly declared and determined by the legislation of Massachusetts. Another cause suggested is the fact that Radcliffe College has been slow to give the Doctor's degree. The reasons for the delay are to be found in the cross current of opinions on the subject; and the arguments which determined the final action of Radcliffe College have been set before the public at the Radcliffe Commencement and in your Reports.

In order to place the instruction in Radcliffe on a satisfactory basis, the College must make up its mind to appeal to the public for an unrestricted fund of at least half a million of dollars. So much has been given to the College unsolicited, that it has seemed wiser, as it has certainly been more agreeable, to refrain from asking. The time to ask has come.

AGNES IRWIN, *Dean.*

# APPENDIX.

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## DEATHS.

*[Persons who died in 1901-02 while holding a University appointment.]*

- FERDINAND BÔCHER**, Professor of Modern Languages. June 7, 1902.  
**JOHN JOSEPH HAYES**, Instructor in Elocution. February 2, 1902.  
**JOHN HOMANS**, Lecturer on Surgery. May 4, 1902.  
**JAMES BRADLEY THAYER**, Weld Professor of Law. February 15, 1902.  
**JOSEPH HENRY THAYER**, Bussey Professor of New Testament Criticism and Interpretation, Emeritus. November 26, 1901.

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## RESIGNATIONS.

- GEORGE CHANDLER BALDWIN**, Assistant in Oral Surgery. September 23, 1902.  
**HOWARD CLARK BARBER**, Proctor, to take effect September 1, 1902.  
**FERDINAND BÔCHER**, Professor of Modern Languages. March 31, 1902.  
**LE BARON RUSSELL BRIGGS**, Dean of Harvard College, to take effect July 1, 1902. April 14, 1902.  
**BURT MYRON BRISTOL**, Instructor in Operative Dentistry. January 13, 1902.  
**ARTHUR ASTOR CAREY**, Trustee of the Museum of Fine Arts. September 23, 1902.  
**THOMAS NIXON CARVER**, Member of the Committee on the Regulation of Athletic Sports, to take effect September 1, 1902.  
**WILLIS ARDEN CHAMBERLIN**, Austin Teaching Fellow in German. May 26, 1902.  
**THATCHER CLARK**, Assistant in French, to take effect September 1, 1902.  
**FRANCIS DARWIN**, Lecturer on Vegetable Physiology. January 13, 1902.  
**SIDNEY BRADSHAW FAY**, Instructor in History. September 23, 1902.  
**THEODORE BRADSHAW FAY**, Proctor, to take effect September 1, 1902.  
**CYRUS BENNETT FOGLER**, Steward of the Dining Association. September 23, 1902.  
**HOYT STODDARD GALE**, Austin Teaching Fellow in Mineralogy and Petrography. May 26, 1902.  
**LEWIS EDWARDS GATES**, Assistant Professor of Comparative Literature. September 23, 1902.  
**ELLIOT HERSEY GOODWIN**, Austin Teaching Fellow in Government. December 30, 1901.  
**HENRY BARRETT HUNTINGTON**, Instructor in English, to take effect September 1, 1902.  
**HERBERT PARLIN JOHNSON**, Assistant in Bacteriology. September 23, 1902.

- WILLIAM EDWARD McELFRESH, Austin Teaching Fellow in Physics. January 27, 1902.
- WILLIAM EDWARD McELFRESH, Instructor in Physics. June 24, 1902.
- CECIL ALBERT MOORE, Assistant in English. September 28, 1902.
- CECIL ALBERT MOORE, Proctor, to take effect September 1, 1902.
- EDWIN WILLIAM PAHLOW, Proctor, to take effect September 1, 1902.
- OGLESBY PAUL, Assistant in Landscape Architecture, to take effect September 1, 1902.
- ALBIN LEAL RICHARDS, Assistant in Government, to take effect September 1, 1902.
- LINCOLN WARE RIDDLE, Austin Teaching Fellow in Botany. September 28, 1902.
- EDWARD ROBINSON, Lecturer on Classical Archaeology. June 2, 1902.
- JAMES BIRCH RORER, Proctor, to take effect September 1, 1902.
- PIERRE LA ROSE, Instructor in English. September 28, 1902.
- ROGERS WENTWORTH SHAPLEIGH, Assistant in Metallurgy. September 28, 1902.
- CLEMENT LAWRENCE SMITH, Dean of the Faculty of Arts and Sciences, to take effect at the end of the academic year. January 27, 1902.
- HENRY SMITH THOMPSON, Assistant Recorder. September 28, 1902.
- JAMES CLARKE WHITE, Professor of Dermatology, to take effect at the end of the academic year. February 8, 1902.
- JOSEPH EDMUND WOODMAN, Assistant in Geology, to take effect September 1, 1902.

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## APPOINTMENTS.

### FACULTY OF ARTS AND SCIENCES.

*[ Without limit of time, or for more than one year. ]*

- GREGORY PAUL BAXTER, Instructor in Chemistry for three years from September 1, 1902. February 15, 1902.
- LE BARON RUSSELL BRIGGS, Dean of the Faculty of Arts and Sciences from July 1, 1902. April 14, 1902.
- THOMAS NIXON CARVER, Professor of Political Economy from September 1, 1902. December 9, 1901.
- JULIAN LOWELL COOLIDGE, Instructor in Mathematics from September 1, 1902. May 12, 1902.
- EUGENE ABRAHAM DARLING, Instructor in Hygiene from September 1, 1901. October 28, 1901.
- ROLAND BURRAGE DIXON, Instructor in Anthropology from September 1, 1902. March 31, 1902.
- JEFFERSON BUTLER FLETCHER, Assistant Professor of Comparative Literature for five years from September 1, 1902. April 28, 1902.
- JEREMIAH DENIS MATTHIAS FORD, Assistant Professor of Romance Languages for five years from September 1, 1902. April 28, 1902.
- JOHN GODDARD HART, Secretary of the Faculty of Arts and Sciences from July 1, 1902. June 9, 1902.
- JOHN GODDARD HART, Instructor in English from September 1, 1902. September 23, 1902.

- CHARLES HOMER HASKINS, Professor of History from September 1, 1902. December 30, 1901.
- BYRON SATTERLEE HURLBUT, Dean of Harvard College from July 1, 1902. April 14, 1902.
- EDWARD CHARLES JEFFREY, Assistant Professor of Vegetable Histology for five years from September 1, 1902. May 26, 1902.
- FRANK LOWELL KENNEDY, Instructor in Mechanical Drawing from September 1, 1902. March 31, 1902.
- ARTHUR EDWIN KENNELLY, Professor of Electrical Engineering. March 31, 1902.
- GUSTAVUS HOWARD MAYNADIER, Instructor in English from September 1, 1902. March 31, 1902.
- CHARLES STURTEVANT MOORE, Assistant Recorder from September 1, 1902. September 23, 1902.
- WILLIAM ALLAN NEILSON, Instructor in English from September 1, 1902. March 31, 1902.
- ARTHUR ORLO NORTON, Instructor in the History and Art of Teaching from September 1, 1902. April 28, 1902.
- FREDERICK LAW OLNSTED, Jr., Instructor in Landscape Architecture from September 1, 1901. November 25, 1901.
- CHARLES PALACHE, Assistant Professor of Mineralogy for five years from September 1, 1902. March 31, 1902.
- CHARLES POMEROY PARKER, Associate Professor of Greek and Latin from September 1, 1902. February 24, 1902.
- THEODORE WILLIAM RICHARDS, Professor of Chemistry from September 1, 1901. November 11, 1901.
- WILLIAM ZEBINA RIPLEY, Professor of Political Economy from September 1, 1902. December 30, 1901.
- EDWARD ROBINSON, Lecturer on Classical Archaeology from September 1, 1901. December 9, 1901.
- FRED NORRIS ROBINSON, Assistant Professor of English for five years from September 1, 1902. April 23, 1902.
- DENMAN WALDO ROSS, Lecturer on the Theory of Design from September 1, 1902. March 31, 1902.
- FRANK RUSSELL, Instructor in Anthropology from September 1, 1902. May 26, 1902.
- HERBERT WEIR SMYTH, Eliot Professor of Greek Literature. March 10, 1902.
- HENRY SMITH THOMPSON, Assistant Recorder. October 14, 1901.
- HENRY SMITH THOMPSON, Officer in charge of Admission Examinations from September 1, 1902. September 23, 1902.
- CHARLES HENRY WHITE, Instructor in Mining and Metallurgy from September 1, 1902. March 31, 1902.
- IRVAH LESTER WINTER, Instructor in Elocution from September 1, 1902. May 26, 1902.
- CHARLES HENRY CONRAD WRIGHT, Assistant Professor of French for five years from September 1, 1902. April 28, 1902.

[ *For the Calendar Year 1901.* ]

CYRUS GUERNSEY PRINGLE, Botanical Collector. October 14, 1901.

[For 1901-02.]

- LEWIS DARWIN AMES, Instructor in Mathematics. October 14, 1901.  
 CHARLES BALDWIN BACON, Assistant in Philosophy. October 14, 1901.  
 NEWTON SAMUEL BACON, Assistant in Hygiene. October 14, 1901.  
 FLOYD GEORGE BALLENTINE, Assistant in Classics. April 14, 1902.  
 GUSTAVE EDWARD BEHR, Jr., Assistant in Chemistry. October 14, 1901.  
 HOLLAND EDWARD BENEDICT, Assistant in Chemistry. October 14, 1901.  
 HOWARD LANE BLACKWELL, Assistant in Physics. October 14, 1901.  
 CHARLES THEODORE BURNETT, Assistant in Philosophy. October 14, 1901.  
 PHILIP GREENLEAF CARLETON, Assistant in English. October 14, 1901.  
 HENRY AVERY CARLTON, Assistant in Chemistry. October 14, 1901.  
 LEWIS CLINTON CARSON, Assistant in Philosophy. October 14, 1901.  
 THATCHER CLARK, Austin Teaching Fellow in French. October 14, 1901.  
 WALTER HOWARD CUSHING, Assistant in History. October 14, 1901.  
 FRANCIS DOHS, Instructor in Gymnastics. October 14, 1901.  
 EDWARD ADDISON DUNLAP, Assistant in Chemistry. October 14, 1901.  
 EDWARD DANA DURAND, Instructor in Economics. December 2, 1901.  
 LUCIEN EATON, Assistant in Mining and Metallurgy. November 25, 1901.  
 MERRITT LYNDON FERNALD, Assistant at the Gray Herbarium. October 14, 1901.  
 JAMES WALTER GOLDTHWAIT, Assistant in Geology (second half-year). December 30, 1901.  
 JESSE MORE GREENMAN, Instructor in Botany and Assistant at the Herbarium for the remainder of the academic year. February 24, 1902.  
 WILLIAM JAY HALE, Assistant in Chemistry. December 9, 1901.  
 NORMAN FISHER HALL, Assistant in French and Spanish. October 28, 1901.  
 LEWIS DANA HILL, Assistant in Physics (second half-year). January 18, 1902.  
 HENRY MINOR HUXLEY, Assistant in Anthropology. October 14, 1901.  
 GORDON IRELAND, Assistant in Philosophy. October 14, 1901.  
 CHARLES HAVEN LADD JOHNSTON, Assistant in English. October 14, 1901.  
 GEORGE HENRY JOHNSTON, Assistant in Philosophy. October 14, 1901.  
 CHARLES JULIUS KULLMER, Assistant in German. October 14, 1901.  
 WALDO GIFFORD LELAND, Assistant in History. October 14, 1901.  
 EMIL LORCH, Assistant in Architecture. December 2, 1901.  
 LEON CARROLL MARSHALL, Assistant in History. December 9, 1901.  
 GEORGE DEKKAR MARVIN, Assistant in English. October 14, 1901.  
 GILBERT SIMRELL MEEM, Jr., Assistant in Mechanical Drawing. October 14, 1901.  
 CHARLES WHITNEY MIXTER, Instructor in Economics. October 14, 1901.  
 CHARLES WHITNEY MIXTER, Assistant in Economics. October 14, 1901.  
 GILBERT HOLLAND MONTAGUE, Assistant in Economics. October 14, 1901.  
 CECIL ALBERT MOORE, Assistant in English. October 14, 1901.  
 CHARLES READ NUTTER, Instructor in English. October 14, 1901.  
 FREDERICK LAW OLMSTED, Jr., Instructor in Landscape Architecture. October 14, 1901.  
 AMON BENTON PLOWMAN, Assistant in Botany for the remainder of the academic year. February 24, 1902.  
 PAUL HECTOR PROVANDIE, Assistant in Hygiene. October 14, 1901.  
 WILLIAM HOWELL REED, Jr., Assistant in German. December 30, 1901.  
 FREDERICK WILLIAM REYNOLDS, Instructor in English. October 14, 1901.

- ALBIN LEAL RICHARDS, Assistant in Government. December 9, 1901.  
 FRANK BERRY SANBORN, Instructor in Hydraulics for the remainder of the academic year. February 10, 1902.  
 ARTHUR BLISS SEYMOUR, Assistant at the Cryptogamic Herbarium. October 14, 1901.  
 ROGERS WENTWORTH SHAPLEIGH, Assistant in Metallurgy (second half-year). May 12, 1902.  
 AUGUSTUS HUNT SHEARER, Assistant in History. October 28, 1901.  
 KENNETH CHARLES MORTON SILLS, Assistant in English. October 14, 1901.  
 CHARLES MINER STEARNS, Assistant in English. October 14, 1901.  
 EMIL HERMAN STONE, Assistant in Chemistry for the remainder of the academic year. March 31, 1902.  
 JAMES BUTLER STUDLEY, Assistant in Government from January 1, 1902, for the remainder of the academic year. January 13, 1902.  
 FREDERICK WARREN TURNER, Assistant in Shop-work. November 25, 1901.  
 EDWARD JAMES WHITTIER, Assistant in the Engineering Laboratories. October 14, 1901.  
 IRYAH LESTER WINTER, Instructor in Elocution. October 14, 1901.  
 ARTHUR DICKINSON WYMAN, Assistant in Chemistry. October 14, 1901.

[*For the Calendar Year 1902.*]

- CYRUS GUERNSEY PRINGLE, Botanical Collector. June 24, 1902.

[*For 1902-03.*]

- OAKES AMES, Instructor in Botany. May 12, 1902.  
 CHARLES HAMILTON ASHTON, Instructor in Mathematics. March 31, 1902.  
 CHARLES HAMILTON AYRES, Instructor in Physics. March 31, 1902.  
 NEWTON SAMUEL BACON, Assistant in Hygiene. June 24, 1902.  
 WILLIAM WILSON BAKER, Instructor in Latin. March 31, 1902.  
 ALBERT FRANCIS BLAKESLEE, Austin Teaching Fellow in Botany. May 12, 1902.  
 HENRY COOK BOYNTON, Austin Teaching Fellow in Metallurgy and Metallography. March 31, 1902.  
 CARL DARLING BUCK, Lecturer on Indo-European Philology (first half-year). March 31, 1902.  
 ALPHONSE BRUN, Instructor in French. March 31, 1902.  
 HARRY EDWIN BURTON, Instructor in Latin (second half-year). March 31, 1902.  
 JOHN HIGGINSON CABOT, 2d, Assistant in History. May 12, 1902.  
 RICHARD CLARKE CABOT, Lecturer on Philosophy. May 12, 1902.  
 DANIEL FRANCIS CALHANE, Assistant in Chemistry. March 31, 1902.  
 ANTONIO ALFREDO CAPOTOSTO, Assistant in Italian. March 31, 1902.  
 PHILIP GREENLEAF CARLETON, Assistant in English. March 31, 1902.  
 FREDERIC WALTON CARPENTER, Assistant in Zoölogy. March 31, 1902.  
 WILLIS ARDEN CHAMBERLIN, Austin Teaching Fellow in German. April 28, 1902.  
 GEORGE HENRY CHASE, Instructor in Greek. March 31, 1902.  
 HENRY HUNT CLARK, Assistant in Design. April 14, 1902.  
 LYMAN KENNETH CLARK, Assistant in Government. May 12, 1902.  
 THATCHER CLARK, Assistant in French. March 31, 1902.

- JOHN FIRMAN COAB, Instructor in German. April 28, 1902.  
 JOHN FELT COLE, Instructor in Astronomy. March 31, 1902.  
 WILLIAM MORSE COLE, Instructor in the Principles of Accounting. March 31, 1902.  
 WALTER HOWARD CUSHING, Assistant in History. May 12, 1902.  
 JOSEPH AUGUSTINE CUSHMAN, Assistant in Palaeontology. April 28, 1902.  
 VANDERVEER CUSTIS, Assistant in Economics. March 31, 1902.  
 FRANCIS DARWIN, Lecturer on Vegetable Physiology. November 25, 1901.  
 FRANCIS DOHS, Instructor in Gymnastics. September 23, 1902.  
 WILLIAM EDWIN DORMAN, Assistant in History. May 12, 1902.  
 EDWARD DANA DURAND, Instructor in Economics (first half-year). May 26, 1902.  
 ALDRICH DURANT, Assistant in Mechanical Drawing. May 26, 1902.  
 SIDNEY BRADSHAW FAY, Instructor in History. March 31, 1902.  
 MERRITT LYNDON FERNALD, Assistant at the Herbarium. May 12, 1902.  
 MERRITT LYNDON FERNALD, Instructor in Botany. September 23, 1902.  
 HENRY HEYWOOD FOX, Austin Teaching Fellow in Engineering. September 23, 1902.  
 ARTHUR BOWES FRIZELL, Instructor in Mathematics. March 31, 1902.  
 CHARLES EDMUND FRYER, Assistant in History. May 12, 1902.  
 HOTT STODDARD GALE, Austin Teaching Fellow in Mineralogy and Petrography. April 23, 1902.  
 ANDREW GARBUTT, Instructor in Modelling. March 31, 1902.  
 EDWIN FRANCIS GAY, Instructor in Economics. May 12, 1902.  
 JAMES AUGUSTUS GEORGE, Assistant in Government. May 12, 1902.  
 JAMES WALTER GOLDTHWAIT, Assistant in Geology. April 28, 1902.  
 NORMAN FISHER HALL, Assistant in French and Spanish. March 31, 1902.  
 THOMAS HALL, Jr., Instructor in English. March 31, 1902.  
 CHARLES SUMNER HAMLIN, Lecturer on United States Government Service. March 31, 1902.  
 LYMAN SAWIN HAPGOOD, Assistant in Hygiene. June 24, 1902.  
 HENRY HARRISON HAYNES, Instructor in Semitic Languages. March 31, 1902.  
 HARRY PETERS HENDERSON, Assistant in Mining. March 31, 1902.  
 LEWIS DANA HILL, Austin Teaching Fellow in Physics. June 24, 1902.  
 ARTHUR STEDMAN HILLS, Assistant in Elocution. May 26, 1902.  
 EDWIN BISSELL HOLT, Instructor in Psychology. April 14, 1902.  
 HECTOR JAMES HUGHES, Instructor in Hydraulics. June 24, 1902.  
 EDWARD VERMILYE HUNTINGTON, Instructor in Mathematics. March 31, 1902.  
 HENRY BARRETT HUNTINGTON, Instructor in English. March 31, 1902.  
 EVERETT KIMBALL, Assistant in History. May 12, 1902.  
 CHARLES JULIUS KULLMER, Instructor in German. June 9, 1902.  
 LAURENCE LA FORGE, Austin Teaching Fellow in Geology. March 31, 1902.  
 ALPHONSE MARIN LAMESLÉE, Instructor in French. March 31, 1902.  
 WILLIAM WITHERLE LAWRENCE, Instructor in German. April 28, 1902.  
 WALDO GIFFORD LELAND, Assistant in History. May 12, 1902.  
 GILBERT NEWTON LEWIS, Instructor in Chemistry. February 15, 1902.  
 EMIL LORCH, Assistant in Architecture. May 26, 1902.  
 THEODORE LYMAN, Instructor in Physics. March 31, 1901.  
 DORSEY ALFRED LYON, Assistant in Mining and Geology. March 31, 1902.  
 MAURICE LAWRENCE MCCARTHY, Assistant in Chemistry. March 31, 1902.  
 WILLIAM EDWARD MCELFRISH, Instructor in Physics. March 31, 1902.

- EDMUND ROBERT OTTO VON MACH, Instructor in Greek Art. April 14, 1902.  
 THOMAS CALVIN MCKAY, Assistant in Physics. March 31, 1902.  
 GILBERT SIMRALL MEEB, Jr., Assistant in Mechanical Drawing. May 26, 1902.  
 ROGER BIGELOW MERRIMAN, Instructor in History. May 12, 1902.  
 DICKINSON SERGEANT MILLER, Instructor in Philosophy. April 14, 1902.  
 CHARLES WHITNEY MIXTER, Instructor in Economics. March 31, 1902.  
 GILBERT HOLLAND MONTAGUE, Assistant in Economics. March 31, 1902.  
 CECIL ALBERT MOORE, Assistant in English. March 31, 1902.  
 SYLVANUS GRISWOLD MORLEY, Instructor in Romance Languages and Literatures. March 31, 1902.  
 HARRY WHEELER MORSE, Instructor in Physics. June 24, 1902.  
 MARTIN MOWER, Instructor in Fine Arts. April 14, 1902.  
 JAMES AMBROSE MOYER, Instructor in Descriptive Geometry. March 31, 1902.  
 HERMAN DUDLEY MURPHY, Instructor in Drawing from the Life. April 14, 1902.  
 ARTHUR BECKWITH MYRICK, Austin Teaching Fellow in Romance Languages. March 31, 1902.  
 ARTHUR EDWIN NORTON, Instructor in Mechanical Drawing. March 31, 1902.  
 CARLETON ELDREDGE NOYES, Instructor in English. March 31, 1902.  
 CHARLES READ NUTTER, Instructor in English. March 31, 1902.  
 EDGAR WILLIAM OLIVE, Instructor in Botany. May 12, 1902.  
 OGLESBY PAUL, Assistant in Landscape Architecture. March 31, 1902.  
 RALPH BARTON PERRY, Instructor in Philosophy. May 12, 1902.  
 AMOS WILLIAM PETERS, Austin Teaching Fellow in Zoölogy. March 31, 1902.  
 GEORGE WASHINGTON PIERCE, Instructor in Physics. March 31, 1902.  
 AMON BENTON PLOWMAN, Assistant in Botany. May 12, 1902.  
 ARTHUR POPE, Austin Teaching Fellow in Fine Arts. April 14, 1902.  
 MURRAY ANTHONY POTTER, Instructor in Romance Languages. March 31, 1902.  
 PAUL HECTOR PROVANDIE, Assistant in Hygiene. June 24, 1902.  
 HERBERT WILBUR RAND, Instructor in Zoölogy. March 31, 1902.  
 MOTTE ALSTON READ, Instructor in Geology. March 31, 1902.  
 THOMAS HARRY REED, Assistant in Government. May 12, 1902.  
 WILLIAM HOWELL REED, Jr., Instructor in German. April 28, 1902.  
 FREDERICK WILLIAM REYNOLDS, Instructor in English. March 31, 1902.  
 ALBIN LEAL RICHARDS, Assistant in Government. May 12, 1902.  
 LINCOLN WARE RIDDLE, Austin Teaching Fellow in Botany. May 12, 1902.  
 HENRY MILNER RIDGOUT, Instructor in English. March 31, 1902.  
 GUY HALL ROBERTS, Assistant in Government. May 12, 1902.  
 WILLIAM HENRY ROEVER, Instructor in Mathematics. June 24, 1902.  
 PIERRE LA ROSE, Instructor in English. March 31, 1902.  
 FREDERICK WILLIAM RUSSE, Assistant in Chemistry. September 23, 1902.  
 ARTHUR WILLIAM RYDER, Instructor in Indic Philology. April 28, 1902.  
 ARTHUR BLISS SEYMOUR, Assistant in the Cryptogamic Herbarium. June 24, 1902.  
 ROGERS WENTWORTH SHAPLEIGH, Assistant in Metallurgy. March 31, 1902.  
 ARTHUR ASAH EL SHURTLEFF, Instructor in Landscape Architecture. March 31, 1902.  
 KENNETH CHARLES MORTON SILLS, Assistant in English. March 31, 1902.  
 MACY MILLMORE SKINNER, Instructor in German. April 28, 1902.  
 GRANT SMITH, Austin Teaching Fellow in Zoölogy. March 31, 1902.



- WILLIAM BRACKETT SNOW, Instructor in Methods of Teaching French (first half-year). April 28, 1902.
- CHARLES MINER STEARNS, Assistant in English. March 31, 1902.
- FREDERIC JESUP STIMSON, Lecturer on Tendencies of American Legislation. May 12, 1902.
- ALBERT MOREY STURTEVANT, Austin Teaching Fellow in German. April 28, 1902.
- WALTER DANA SWAN, Instructor in Architecture. March 31, 1902.
- FREDERICK WARREN TURNER, Assistant in Shop-work. May 26, 1902.
- FRANK DEWITT WASHBURN, Assistant in the Architectural Library. March 31, 1902.
- EDGAR HUIDEKOPER WELLS, Assistant in English. March 31, 1902.
- ROGER CLARK WELLS, Austin Teaching Fellow in Chemistry. March 31, 1902.
- ROBERT MAXIMILIAN OTTOMAR WERNAER, Instructor in German. April 28, 1902.
- STEPHEN EDGAR WHITING, Instructor in Electrical Engineering. March 31, 1902.
- ARTHUR FISHER WHITEM, Austin Teaching Fellow in Romance Languages. March 31, 1902.
- FREDERICK MASON WILDER, Assistant in Physiography and Meteorology. May 12, 1902.
- BERTEL GLIDDEN WILLARD, Assistant in Elocution. June 24, 1902.
- JOSEPH EDMUND WOODMAN, Assistant in Geology. March 31, 1902.
- BRUCE WYMAN, Lecturer on Suretyship and Mortgage. March 31, 1902.
- ROBERT MEARNS YERKES, Instructor in Psychology. April 28, 1902.

MEMBERS OF THE ADMINISTRATIVE BOARD OF HARVARD COLLEGE.

SEPTEMBER 23, 1902.

- |  |                              |
|--|------------------------------|
| BYRON SATTERLEE HURLBUT, <i>Dean</i> . | ROBERT DECOURCY WARD.        |
| ROBERT WHEELER WILLSON.                | CHARLES BURTON GULICK.       |
| CHARLES POMEROY PARKER.                | CHARLES PALACHE.             |
| CHARLES GROSS.                         | FRED NORRIS ROBINSON.        |
| CHARLES HALL GRANDGENT.                | JAY BACKUS WOODWORTH.        |
| JOHN HAYS GARDINER.                    | CHARLES HENRY CONRAD WRIGHT. |
| ARCHIBALD CARY COOLIDGE.               | RICHARD COBB.                |
| LEWIS JEROME JOHNSON.                  | JOHN GODDARD HART.           |
| GEORGE WASHINGTON CRAM.                | JAMES KELSEY WHITTEMORE.     |

MEMBERS OF THE ADMINISTRATIVE BOARD OF THE LAWRENCE SCIENTIFIC SCHOOL.

SEPTEMBER 23, 1902.

- |   |                            |
|---|----------------------------|
| NATHANIEL SOUTHGATE SHALER, <i>Dean</i> . | HEINRICH CONRAD BIERWIRTH. |
| IRA NELSON HOLLIS.                        | ROBERT TRACY JACKSON.      |
| HERBERT LANGFORD WARREN.                  | JAMES LEE LOVE.            |
| CHARLES ROBERT SANGER.                    | GEORGE HOWARD PARKER.      |
| HENRY LLOYD SMYTH.                        | COMFORT AVERY ADAMS, Jr.   |
| FRANK LOWELL KENNEDY.                     |                            |

MEMBERS OF THE ADMINISTRATIVE BOARD OF THE  
GRADUATE SCHOOL.

SEPTEMBER 28, 1902.

JOHN HENRY WRIGHT, <i>Dean</i> .	HANS CARL GÜNTHER VON JAGEMANN.
CHARLES LORING JACKSON.	ABBOTT LAWRENCE LOWELL.
WILLIAM MORRIS DAVIS.	EDWARD CHANNING.
MINTON WARREN.	GEORGE LYMAN KITTREDGE.
DAVID GORDON LYON.	HUGO MÜNSTERBERG.
	MAXIME BÔCHER.

PROCTORS.

APPOINTED MAY 26, 1902, UNLESS OTHERWISE STATED.

HOWARD CLARK BARBER.	CHESTER NOYES GREENOUGH. Sep- tember 28, 1902.
WILLIAM LESTER BARNES.	ARTHUR STEDMAN HILLS.
LYNN STALEY BEALS.	WILLIAM GEORGE LEE.
DWIGHT ST. JOHN BOBB.	WILLIAM EDWARD McELFRESH.
HENRY COOK BOYNTON.	GEORGE DEKKAR MARVIN.
JOSEPH GARDNER BRADLEY.	HAROLD WESTON MASON.
JOHN HIGGINSON CABOT, 2d.	GILBERT SIMRALL MEEM, Jr.
FREDERIC WALTON CARPENTER. June 2, 1902.	GILBERT HOLLAND MONTAGUE.
WILLIAM ARNOLD COLWELL.	CECIL ALBERT MOORE.
JAMES FREEMAN CURTIS.	EDWIN WILLIAM PAHLOW.
BERNARD CAPEN EWER. September 28, 1902.	JAMES HORACE PATTEN.
THEODORE BRADSHAW FAY. Septem- ber 28, 1902.	JAMES BIRCH RORER.
MERRITT LYNDON FERNALD.	PIERRE LA ROSE. September 28, 1902.
ROGER SAWYER FORBES. September 28, 1902.	KENNETH CHARLES MORTON SILLS. September 28, 1902.
WALTER ARCHER FROST.	CHARLES MINER STEARNS September 28, 1902.
JAMES AUGUSTUS GEORGE.	HENRY SMITH THOMPSON.
WARWICK GREENE.	BARRETT WENDELL, Jr.
	HENRY AARON YEOMANS.
	ROBERT MEARNS YERKES.

MEMBERS OF THE BOARD OF EXAMINATION PROCTORS.

APPOINTED OCTOBER 28, 1901, UNLESS OTHERWISE STATED.

EBENEZER HENRY ARCHIBALD.	FREDERIC WALTON CARPENTER.
WILLIAM WILSON BAKER.	RICHARD BLAIR EARLE.
WILLIAM LESTER BARNES.	JAMES AUGUSTUS GEORGE.
ALBERT FRANCIS BLAKESLEE.	WALTER DAVID HOPKINS.
DWIGHT ST. JOHN BOBB.	JOHN PERHAM HULAN.
FREDERIC BONNET, Jr.	JULIUS MUNROE JOHNSON.
CHARLES STANLEY BROWN.	WALDO SHAW KENDALL.
LEO LEGAY BURLEY.	WILLIAM EDWARD McELFRESH.
DANIEL FRANCIS CALHANE.	KENNETH LAMARTINE MARK.

LEON CARROLL MARSHALL.	CARL COSMO RICE.
CHARLES STURTEVANT MOORE.	MALCOLM ENOS STICKNEY.
CHARLES POMEROY PARKER. Decem- ber 9, 1901.	GEORGE RUSSELL STOBBS.
JAMES HORACE PATTEN.	KENNETH GRANT TREMAYNE WEBSTER.
HARVEY ANDREW PETERSON.	ROGER CLARK WELLS.
FREDERICK WILLIAM REYNOLDS.	JOSEPH EDMUND WOODMAN.
	ROBERT MEARNS YERKES.

## DIVINITY SCHOOL.

[Without limit of time, or for more than one year.]

- EDWARD HALE, Assistant Professor of Homiletics for five years from September 1, 1902. September 23, 1902.
- EDWARD CALDWELL MOORE, Parkman Professor of Theology. October 28, 1901.

[For 1901-02.]

- SAMUEL SILAS CURRY, Instructor in Elocution. October 14, 1901.

## LAW SCHOOL.

[For 1902-03.]

- EDWARD BRINLEY ADAMS, Lecturer on Property. May 26, 1902.
- CHARLES JAMES HUGHES, JR., Lecturer on Mining Law. September 23, 1902.
- WILLIAM RODMAN PRABODY, Lecturer on Criminal Law. May 12, 1902.
- ARTHUR CHARLES ROUNDS, Lecturer on New York Practice. May 12, 1902.
- BRUCE WYMAN, Lecturer on Property, Carriers, and Conflict of Laws. May 12, 1902.

## MEDICAL SCHOOL.

[Without limit of time, or for more than one year.]

- JOHN TEMPLETON BOWEN, Assistant Professor of Dermatology for five years from September 1, 1902. April 14, 1902.
- MAURICE HOWE RICHARDSON, Associate Professor of Clinical Surgery from September 1, 1902. June 24, 1902.
- JOHN WARREN, Demonstrator of Anatomy for five years from September 1, 1902. April 14, 1902.
- JAMES CLARKE WHITE, Professor of Dermatology, Emeritus. February 3, 1902.

[For 1901-02.]

- WALTER CHANNING BAILEY, Assistant in Chemistry (second half-year). January 13, 1902.
- ROBERT LEONARD EMERSON, Instructor in Physiological Chemistry. October 14, 1901.
- WILLIAM ROBIE PATTEN EMERSON, Assistant in Histology. October 14, 1901.
- LEO VICTOR FRIEDMAN, Assistant in Obstetrics. October 14, 1901.
- LANGDON FROTHINGHAM, Austin Teaching Fellow in Bacteriology. October 14, 1901.
- ALLEN GREENWOOD, Assistant in Ophthalmology. October 14, 1901.

- WALTER APPLETON LANE, Assistant in Chemistry (second half-year). January 13, 1902.
- THOMAS JAMES MANAHAN, Assistant in Clinical and Operative Surgery. October 28, 1901.
- RUSSELL BURTON-OPITZ, Assistant in Physiology. October 14, 1901.
- GEORGE PHIPPEN SANBORN, Assistant in Bacteriology. October 14, 1901.
- SIDNEY KENT SINGER, Assistant in Chemistry (second half-year). March 31, 1902.
- WILDER TILESTON, Assistant in Chemistry (second half-year). January 13, 1902.
- GEORGE ARTHUR WATERMAN, Assistant in Neurology. October 14, 1901.
- JOSEPH DEUTSCH WEIS, Austin Teaching Fellow in Bacteriology. October 14, 1901.

[For 1902-03.]

- SEABURY WELLS ALLEN, Assistant in Anatomy. June 9, 1902.
- CARL LUCAS ALSBERG, Assistant in Physiological Chemistry. June 9, 1902.
- JOHN LINCOLN AMES, Assistant in Clinical Medicine. June 9, 1902.
- GEORGE SHERWIN CLARKE BADGER, Assistant in the Theory and Practice of Physic. June 9, 1902.
- FRANKLIN GREENE BALCH, Assistant in Clinical and Operative Surgery. June 9, 1902.
- JOHN WASHBURN BARTOL, Assistant in Clinical Medicine. June 9, 1902.
- HENRY HARRIS AUBREY BEACH, Lecturer on Surgery. June 9, 1902.
- JOHN BAPT BLAKE, Assistant in Clinical and Operative Surgery. June 9, 1902.
- JOHN TAYLOR BOTTOMLEY, Assistant in Clinical and Operative Surgery. June 9, 1902.
- CHARLES HERBERT BOXMEYER, Austin Teaching Fellow in Comparative Pathology. June 9, 1902.
- ELLIOTT GRAY BRACKETT, Assistant in Orthopedics. June 9, 1902.
- JOHN LEWIS BREMER, Instructor in Histology and Embryology. June 9, 1902.
- GEORGE WASHINGTON WALES BREWSTER, Assistant in Clinical and Operative Surgery. June 9, 1902.
- EDWARD MARSHALL BUCKINGHAM, Clinical Instructor in Diseases of Children. June 9, 1902.
- CHARLES SHOREY BUTLER, Assistant in Anatomy. June 9, 1902.
- HUGH CAROT, Assistant in Operative Surgery. June 9, 1902.
- RICHARD CLARKE CABOT, Assistant in Clinical Medicine. June 9, 1902.
- WALTER BRADFORD CANNON, Instructor in Physiology. June 9, 1902.
- HENRY ASBURY CHRISTIAN, Instructor in Pathology. June 9, 1902.
- EDMUND WRIGHT CLAP, Assistant in Ophthalmology. June 9, 1902.
- FARRAR COBB, Assistant in Clinical and Operative Surgery. June 9, 1902.
- ERNEST AMORY CODMAN, Assistant in Clinical and Operative Surgery. June 9, 1902.
- JOHN MATTHEW CONNOLLY, Assistant in Chemistry. June 9, 1902.
- ALGERNON COOLIDGE, JR., Clinical Instructor in Laryngology. June 9, 1902.
- FREDERIC JAY COTTON, Assistant in Surgery. June 9, 1902.
- EDWARD COWLES, Clinical Instructor in Mental Diseases. June 9, 1902.
- GEORGE ARTHUR CRAIGIN, Assistant in Diseases of Children. June 9, 1902.
- EUGENE ANTHONY CROCKETT, Assistant in Otolaryngology. June 9, 1902.
- ELBRIDGE GERRY CUTLER, Instructor in the Theory and Practice of Physic. June 9, 1902.

- JOHN DANE**, Assistant in Orthopedics. June 9, 1902.  
**LINCOLN DAVIS**, Assistant in Anatomy. June 9, 1902.  
**THOMAS AMORY DEBLOIS**, Clinical Instructor in Laryngology. June 9, 1902.  
**FRANCIS PARKMAN DENNY**, Assistant in Bacteriology. June 9, 1902.  
**JAMES CROWLEY DONOGHUE**, Assistant in Histology. June 9, 1902.  
**EDWIN WELLES DWIGHT**, Instructor in Legal Medicine. June 9, 1902.  
**SAMUEL HOLMES DURGIN**, Lecturer on Hygiene. June 9, 1902.  
**JOHN WHEELOCK ELLIOT**, Lecturer on Surgery. June 9, 1902.  
**ROBERT LEONARD EMERSON**, Instructor in Physiological Chemistry. June 9, 1902.  
**WILLIAM ROBIE PATTEN EMERSON**, Assistant in Histology. June 9, 1902.  
**EUGENE ELLSWORTH EVERETT**, Assistant in Bacteriology. June 9, 1902.  
**JOHN WOODFORD FARLOW**, Clinical Instructor in Laryngology. June 9, 1902.  
**WILLIAM EDWARD FAULKNER**, Assistant in Clinical and Operative Surgery. June 9, 1902.  
**LEO VICTOR FRIEDMAN**, Assistant in Obstetrics. June 9, 1902.  
**LANGDON FROTHINGHAM**, Austin Teaching Fellow in Bacteriology. June 9, 1902.  
**GEORGE WASHINGTON GAY**, Lecturer on Surgery. June 9, 1902.  
**JOEL ERNEST GOLDTHWAIT**, Assistant in Orthopedics. June 9, 1902.  
**ALFRED HENRY GOULD**, Assistant in Clinical and Operative Surgery. June 9, 1902.  
**CHARLES MONTRAVILLE GREEN**, Secretary of the Faculty of Medicine. June 9, 1902.  
**ROBERT BATTAY GREENOUGH**, Assistant in Surgery. June 9, 1902.  
**PHILIP HAMMOND**, Assistant in Otology. June 9, 1902.  
**GEORGE HAVEN**, Instructor in Gynaecology. June 9, 1902.  
**HENRY FOX HEWES**, Instructor in Clinical Chemistry. June 9, 1902.  
**FRANK ALBERT HIGGINS**, Instructor in Obstetrics. June 9, 1902.  
**EDWIN EVERETT JACK**, Assistant in Ophthalmology. June 9, 1902.  
**HENRY JACKSON**, Instructor in Clinical Medicine. June 9, 1902.  
**JAMES MARSH JACKSON**, Assistant in Clinical Medicine. June 9, 1902.  
**HERBERT PARLIN JOHNSON**, Assistant in Bacteriology. June 9, 1902.  
**JAMES OSCAR JORDAN**, Assistant in Materia Medica. June 9, 1902.  
**ELLIOT PROCTOR JOSLIN**, Assistant in the Theory and Practice of Physic. June 9, 1902.  
**PHILIP COOMBS KNAPP**, Clinical Instructor in Diseases of the Nervous System. June 9, 1902.  
**MAYNARD LADD**, Assistant in Diseases of Children. June 9, 1902.  
**EDWARD BINNEY LANE**, Clinical Instructor in Mental Diseases. June 9, 1902.  
**RALPH CLINTON LARRABEE**, Assistant in Histology. June 9, 1902.  
**FREDERICK THOMAS LEWIS**, Instructor in Histology and Embryology. June 9, 1902.  
**HOWARD AUGUSTUS LOTHROP**, Assistant in Surgery. June 9, 1902.  
**ROBERT WILLIAMSON LOVETT**, Assistant in Orthopedics. June 9, 1902.  
**FRED BATES LUND**, Assistant in Clinical and Operative Surgery. June 9, 1902.  
**JOHN HILDRETH MCCOLLOM**, Instructor in Contagious Diseases. June 9, 1902.  
**GEORGE BURGESS MAGRATH**, Assistant in Pathology. June 9, 1902.  
**HENRY ORLANDO MARCY, Jr.**, Assistant in Anatomy. June 9, 1902.  
**SAMUEL JASON MIXTER**, Assistant in Operative Surgery. June 9, 1902.  
**GEORGE HOWARD MONKS**, Assistant in Operative Surgery. June 9, 1902.

- GEORGE HOWARD MONKS, Instructor in Clinical Surgery. June 9, 1902.  
 JOHN LOVETT MORSE, Instructor in Diseases of Children. June 9, 1902.  
 HARRIS PEYTON MOSHER, Assistant in Anatomy. June 9, 1902.  
 JAMES GREGORY MUMFORD, Assistant in Clinical and Operative Surgery. June 9, 1902.  
 JOHN CUMMINGS MUNRO, Instructor in Surgery. June 9, 1902.  
 PERCY MUSGRAVE, Assistant in Chemistry. June 9, 1902.  
 FRANKLIN SPILMAN NEWELL, Assistant in Obstetrics and Gynaecology. June 9, 1902.  
 EDWARD HALL NICHOLS, Instructor in Surgical Pathology. June 9, 1902.  
 CALVIN GATES PAGE, Assistant in Bacteriology. June 9, 1902.  
 HENRY JOSEPH PERRY, Assistant in Bacteriology. June 9, 1902.  
 CHARLES ALLEN PORTER, Instructor in Surgery. June 9, 1902.  
 ABNER POST, Instructor in Syphilis. June 9, 1902.  
 WILLIAM HERBERT PRESCOTT, Assistant in Clinical Medicine. June 9, 1902.  
 ALEXANDER QUACKENBOSS, Assistant in Ophthalmology. June 9, 1902.  
 CHARLES LOCKE SCUDDER, Assistant in Clinical and Operative Surgery. June 9, 1902.  
 CHARLES MORTON SMITH, Assistant in Syphilis. June 9, 1902.  
 WILLIAM HENRY SMITH, Assistant in Clinical Medicine. June 9, 1902.  
 FRED MAURICE SPALDING, Assistant in Ophthalmology. June 9, 1902.  
 MYLES STANDISH, Instructor in Ophthalmology. June 9, 1902.  
 FREDERICK WINSLOW STETSON, Assistant in Anatomy. June 9, 1902.  
 ARTHUR KINGSBURY STONE, Assistant in the Theory and Practice of Physic. June 9, 1902.  
 MALCOLM STORER, Assistant in Gynaecology. June 9, 1902.  
 HOWARD TOWNSEND SWAIN, Assistant in Obstetrics. June 9, 1902.  
 EDWARD WYLLYS TAYLOR, Instructor in Neuropathology. June 9, 1902.  
 PAUL THORNDIKE, Instructor in Genito-Urinary Surgery. June 9, 1902.  
 WILLIAM HENRY TOBEY, Jr., Assistant in Bacteriology. June 9, 1902.  
 ERNEST EDWARD TYZZER, Austin Teaching Fellow in Histology and Embryology. June 9, 1902.  
 MAURICE PAUL OCTAVE VEJUX-TYRODE, Instructor in Pharmacology. June 9, 1902.  
 HERMAN FRANK VICKERY, Instructor in Clinical Medicine. June 9, 1902.  
 DAVID HAROLD WALKER, Assistant in Hygiene. June 9, 1902.  
 GEORGE LINCOLN WALTON, Clinical Instructor in the Diseases of the Nervous System. June 9, 1902.  
 GEORGE ARTHUR WATERMAN, Assistant in Neurology. June 9, 1902.  
 FRANCIS SEDGWICK WATSON, Lecturer on Genito-Urinary Surgery. June 9, 1902.  
 CHARLES JAMES WHITE, Instructor in Dermatology. June 9, 1902.  
 FRANKLIN WARREN WHITE, Assistant in the Theory and Practice of Physic. June 9, 1902.  
 GEORGE SHATTUCK WHITESIDE, Assistant in Anatomy. June 9, 1902.  
 WILLIAM WHITRIDGE WILLIAMS, Assistant in Pathology. June 9, 1902.  
 CHARLES FRANCIS WITHINGTON, Instructor in Clinical Medicine. June 9, 1902.  
 JAMES HOMER WRIGHT, Instructor in Pathology. June 9, 1902.  
 ERNEST BOYEN YOUNG, Assistant in Anatomy and Gynaecology. June 9, 1902.

MEMBERS OF THE ADMINISTRATIVE BOARD OF THE  
MEDICAL SCHOOL.

NOVEMBER 25, 1901.

WILLIAM LAMBERT RICHARDSON, *Dean*. WILLIAM FISKE WHITNEY.  
JOHN COLLINS WARREN. CHARLES MONTRAVILLE GREEN.  
EDWARD STICKNEY WOOD. CHARLES HARRINGTON.  
FREDERICK CHEEVER SHATTUCK. FRANKLIN DEXTER.  
FRANK BURR MALLORY.

DENTAL SCHOOL.

[*For 1901-02.*]

SAMUEL TUTTLE ELLIOTT, Instructor in Operative Dentistry for the remainder  
of the academic year. January 18, 1902.

[*For 1902-03.*]

LAWRENCE WILLS BAKER, Assistant in Orthodontia. June 9, 1902.  
GEORGE CHANDLER BALDWIN, Assistant in Oral Surgery. June 9, 1902.  
EDWIN CARTER BLAISDELL, Instructor in Operative Dentistry. June 9, 1902.  
FREDERICK BRADLEY, Instructor in Operative Dentistry. June 9, 1902.  
ALLEN STANLEY BURNHAM, Instructor in Mechanical Dentistry. June 9, 1902.  
ASHER HARRIMAN ST. CLAIR CHASE, Assistant Demonstrator of Mechanical  
Dentistry. June 9, 1902.  
ERNEST HOWARD CHUTE, Instructor in Mechanical Dentistry. June 9, 1902.  
DWIGHT MOSES CLAPP, Clinical Lecturer on Operative Dentistry. June 9, 1902.  
HAROLD DEWITT CROSS, Demonstrator of Mechanical Dentistry. June 9, 1902.  
JOHN DANA DICKINSON, Clinical Instructor in Mechanical Dentistry. June 9,  
1902.  
JOHN WALKER DICKINSON, Instructor in Mechanical Dentistry. June 9, 1902.  
DWIGHT WARD DICKINSON, Assistant Demonstrator of Operative Dentistry.  
June 9, 1902.  
FOREST GREENWOOD EDDY, Instructor in Operative Dentistry. June 9, 1902.  
ARTHUR WARREN ELDRED, Instructor in Mechanical Dentistry. June 9, 1902.  
SAMUEL TUTTLE ELLIOTT, Instructor in Operative Dentistry. June 9, 1902.  
EDWIN LINWOOD FARRINGTON, Instructor in Operative Dentistry. June 9,  
1902.  
GEORGE LINCOLN FORREST, Instructor in Operative Dentistry. June 9, 1902.  
HARRY LINWOOD GRANT, Instructor in Mechanical Dentistry. June 9, 1902.  
GEORGE RUFUS GRAY, Instructor in Operative Dentistry. June 9, 1902.  
FRANCIS HERBERT HARDING, Instructor in Operative Dentistry. June 9, 1902.  
ERNEST JEWETT HART, Instructor in Extracting and Anaesthesia. June 9,  
1902.  
THOMAS BERNARD HAYDEN, Instructor in Mechanical Dentistry. June 9, 1902.  
ELLIS PROCTOR HOLMES, Instructor in Operative Dentistry. June 9, 1902.  
ROBERT JOHN McMEEKIN, Demonstrator of Operative Dentistry. June 9, 1902.  
GEORGE HOWARD MONKS, Instructor in Surgical Pathology. June 9, 1902.  
LESLIE HERBERT NAYLOR, Instructor in Operative Dentistry. June 9, 1902.

HARRY SNOW PARSONS, Instructor in Mechanical Dentistry. June 9, 1902.  
 JOSEPH TOTTEN PAUL, Instructor in Operative Dentistry. June 9, 1902.  
 CHARLES ERNEST PERKINS, Instructor in Operative Dentistry. June 9, 1902.  
 CHARLES WILLIAM RODGERS, Assistant in Dental Materia Medica. June 9, 1902.  
 HENRY CARLTON SMITH, Assistant in Chemistry. June 9, 1902.  
 WILLIAM DANIEL SQUAREBRIGGS, Instructor in Extracting and Anaesthesia. June 9, 1902.  
 WILFRED FARLOW STARRATT, Instructor in Operative Dentistry. June 9, 1902.  
 ARTHUR HENRY STODDARD, Clinical Lecturer in Mechanical Dentistry. June 9, 1902.  
 EZRA FLETCHER TAFT, Instructor in Operative Dentistry. June 9, 1902.  
 EDWARD WYLLYS TAYLOR, Instructor in Neurology. June 9, 1902.  
 EVAN PARKER WENTWORTH, Instructor in Operative Dentistry. June 9, 1902.  
 JULIUS GEORGE WILLIAM WERNER, Clinical Instructor in Operative Dentistry. June 9, 1902.

#### MEMBERS OF THE ADMINISTRATIVE BOARD OF THE DENTAL SCHOOL.

NOVEMBER 25, 1901.

EUGENE HANES SMITH, <i>Dean</i> .	EDWARD CORNELIUS BRIGGS.
THOMAS FILLEBROWN.	WILLIAM PARKER COOKE.
CHARLES ALBERT BRACKETT.	WILLIAM HENRY POTTER.
WILLIAM BARKER HILLS.	DWIGHT MOSES CLAPP.
WALDO ELIAS BOARDMAN.	

SEPTEMBER 23, 1902.

EUGENE HANES SMITH, <i>Dean</i> .	EDWARD CORNELIUS BRIGGS.
THOMAS FILLEBROWN.	WILLIAM PARKER COOKE.
CHARLES ALBERT BRACKETT.	WILLIAM HENRY POTTER.
WILLIAM BARKER HILLS.	DWIGHT MOSES CLAPP.
WALDO ELIAS BOARDMAN.	

#### BUSSEY INSTITUTION.

[For 1901-02.]

ELWOOD MEAD, Instructor in Irrigation. November 25, 1901.

[For the Calendar Year 1902.]

JOHN GEORGE JACK, Lecturer at the Arnold Arboretum. September 23, 1902.

[For 1902-03.]

FRANK THOMPSON DILLINGHAM, Assistant in Chemistry. April 28, 1902.  
 JOHN HAMILTON ROBINETTE, Assistant in Agriculture. September 23, 1902.  
 CHARLES STEPHEN SHAUGHNESSY, Instructor in Mathematics and Surveying. June 9, 1902.



OTHER APPOINTMENTS.

[Without limit of time, or for more than one year.]

ALEXANDER AGASSIZ, Director of the University Museum. April 28, 1902.  
 CHARLES GROSS, Member of the Library Council, in place of F. W. Taussig.  
 May 26, 1902.  
 WILLIAM AUGUSTUS JAILLET, Steward of the Dining Association. September  
 28, 1902.

[For 1901-02.]

LYNN STALEY BEALS, Auditor of the Randall Hall Association. October 14,  
 1901.  
 WILLIAM ARNOLD COLWELL, Proctor. December 2, 1901.  
 GORDON IRELAND, Proctor. October 14, 1901.  
 GEORGE DEKKAR MARVIN, Proctor. November 11, 1901.  
 GILBERT HOLLAND MONTAGUE, Proctor. December 9, 1901.  
 CECIL ALBERT MOORE, Proctor for the remainder of the academic year.  
 January 27, 1902.

[For 1902-03.]

LYNN STALEY BEALS, Auditor of the Randall Hall Association. June 24, 1902.  
 THOMAS AUGUSTUS JAGGAR, Jr., Chairman of the Parietal Board during the  
 absence of the Regent. September 23, 1902.

PREACHERS TO THE UNIVERSITY.

JUNE 9, 1902.

WASHINGTON GLADDEN.	GEORGE FOOT MOORE.
FRANCIS BROWN.	FLOYD WILLIAMS TOMKINS.
	WILLIAM WALLACE FENN.

COMMITTEE ON THE REGULATION OF ATHLETIC SPORTS.

JUNE 24, 1902.

<i>Faculty Members:</i>	<i>Graduate Members:</i>
ARCHIBALD CARY COOLIDGE.	JAMES JACKSON STORROW.
THOMAS NIXON CARVER.	ROLAND WILLIAM BOYDEN.
	BETRAM GORDON WATERS.

TRUSTEES OF THE MUSEUM OF FINE ARTS.

[For one year from January 1, 1901.]

NOVEMBER 25, 1901.

WILLIAM STURGIS BIGELOW,	ARTHUR ASTOR CARY,
ARTHUR TRACY CABOT.	

[For the remainder of the year.]

SEPTEMBER 23, 1902.

JOHN TEMPLEMAN COOLIDGE, Jr.

**ORDINARY DEGREES CONFERRED IN 1899, 1900,  
1901 AND 1902.**

	1899.	1900.	1901.	1902
Bachelors of Arts . . . . .	448	404	457	422
Bachelors of Arts out of course . . . . .	25	15	26	32
Bachelors of Science . . . . .	46	59	75	76
Bachelors of Science out of course . . . . .	11	6	4	7
Bachelors of Divinity . . . . .	2	5	2	5
Bachelors of Divinity out of course . . . . .	0	0	0	1
Bachelors of Laws . . . . .	109	126	136	146
Bachelors of Laws out of course . . . . .	8	8	9	16
Bachelors of Agricultural Science . . . . .	0	0	2	5
Doctors of Medicine . . . . .	108	180	116	130
Doctors of Medicine out of course . . . . .	1	0	4	1
Doctors of Dental Medicine . . . . .	36	33	29	32
Doctors of Dental Medicine out of course . . . . .	1	0	0	0
Doctors of Veterinary Medicine . . . . .	8	7	6	0
Doctors of Veterinary Medicine out of course . . . . .	1	0	1	1
Masters of Arts . . . . .	118	125	119	110
Masters of Arts out of course . . . . .	6	9	6	10
Masters of Science . . . . .	6	1	7	8
Masters of Science out of course . . . . .	0	0	3	0
Doctors of Philosophy . . . . .	23	35	29	28
Doctors of Science . . . . .	1	1	0	3
Totals . . . . .	958	964	1031	1033

**PUBLICATIONS OF THE MUSEUM OF COMPARATIVE  
ZOOLOGY FOR THE ACADEMIC YEAR 1901-02.**

Bulletin : —

Vol. XXXVII.

No. 3. Contributions from the Zoölogical Laboratory. No. 126. The Regenerating Nervous System of Lumbricidae and the Centrosome of its Nerve Cells. By Herbert W. Rand. 82 pp. 8 Plates. September, 1901.

Vol. XXXVIII. Geological Series, Vol. V.

No. 5. The Geology of the Northeast Coast of Labrador. By Reginald A. Daly. 68 pp. 13 Plates. February, 1902.

No. 6. Leucite-Tinguaite from Beemerville, New Jersey. By John E. Wolff. 7 pp. February, 1902.

Vol. XXXIX.

No. 1. Some Reptiles and Batrachians from Australasia. By Samuel Garman. 14 pp. 2 Plates. November, 1901.

No. 2. Chiriqui Mammalia. By Outram Bangs. 37 pp. April, 1902.

No. 3. Some Carboniferous Cestraciont and Acanthodian Sharks. By C. R. Eastman. 47 pp. 7 plates. June, 1902.

## Vol. XL.

No. 1. Contributions from the Zoölogical Laboratory. No. 180. Changes accompanying the Migration of the Eye, and Observations on the Tractus opticus and Tectum opticum in *Pseudopleuronectes americanus*. By Stephen R. Williams. 57 pp. 5 Plates. May, 1902.

No. 2. Contributions from the Zoölogical Laboratory. No. 182. The Early Development of *Lepas*. A Study of Cell-Lineage and Germ-Layers. By Maurice A. Bigelow. 86 pp. 12 Plates. July, 1902.

## Memoirs:—

## Vol. XXV.

No. 1. *Uintacrinus*: Its Structure and Relations. By Frank Springer. 89 pp. 8 Plates. August, 1901.

## Vol. XXVI.

No. 1. Reports on the Scientific Results of the Expedition to the Tropical Pacific, 1899–1900. I. Preliminary Report and List of Station. By Alexander Agassiz. With Remarks on the Deep-Sea Deposits. By Sir John Murray. 114 pp. 21 Charts. January, 1902.

No. 2. Reports on the Scientific Results of the Expedition to the Tropical Pacific, 1899–1900. II. Some Species of *Partula* from Tahiti. A Study in Variation. By Alfred G. Mayer. 21 pp. 1 Plate. January, 1902.

No. 3. Reports on the Scientific Results of the Expedition to the Tropical Pacific, 1899–1900. III. *Medusae*. By Alexander Agassiz and Alfred G. Mayer. 40 pp. 13 Plates. 1 Chart. January, 1902.

## Vol. XXVII.

No. 1. Reports on the Results of Dredgings by the United States Coast Survey Steamer "Blake." XXXIX. *Les Dromiacés et Oxystomes*. Par Alphonse Milne Edwards et E. L. Bouvier. 127 pp. 25 Plates. April, 1902.

No. 2. Reports on the Results of Dredgings by the United States Coast Survey Steamer "Blake." XL. *Les Bathynomes*. Par Alphonse Milne Edwards et E. L. Bouvier. 47 pp. 8 Plates. July, 1902.

## Report:—

1900–1901. 88 pp. November, 1901.

TABLE I.  
ILLNESS REPORT, 1901-02.

Diseases.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total
Appendicitis . . . . .	..	4	2	6	3	2	6	4	7	4	38
Bronchitis . . . . .	2	19	20	19	13	14	21	17	7	1	133
Chicken-pox . . . . .	..	1	..	..	..	..	..	..	1	..	2
Colds—unclassified . . . . .	3	23	37	18	26	34	33	31	18	..	233
Constipation . . . . .	1	5	2	1	3	2	2	3	4	..	23
Coryza . . . . .	5	32	59	29	38	35	40	43	18	..	299
Dentistry . . . . .	1	2	8	10	3	4	7	3	4	1	43
Diarrhoea . . . . .	..	14	46	18	13	14	21	17	14	..	157
Diphtheria . . . . .	..	1	2	..	1	..	..	..	..	..	4
Ear, of the . . . . .	..	2	6	4	2	3	13	7	3	4	40
Eye, of the . . . . .	1	38	31	18	14	27	29	34	33	3	228
General Debility . . . . .	1	10	6	9	8	9	4	8	6	3	64
Headache . . . . .	1	8	16	15	11	5	20	13	9	..	98
Indigestion . . . . .	2	45	72	49	29	31	55	44	36	9	372
Insomnia . . . . .	..	3	..	2	2	2	3	2	1	..	15
Jaundice . . . . .	..	2	..	1	1	2	2	2	1	..	11
La Grippe . . . . .	..	2	16	9	19	18	25	7	3	..	99
Laryngitis . . . . .	1	5	5	2	1	4	..	4	..	..	22
Malaria . . . . .	..	5	2	2	2	4	..	3	6	2	26
Measles . . . . .	..	..	..	..	4	9	15	14	..	..	42
Miscellaneous . . . . .	4	77	71	36	30	53	66	37	22	10	406
Mumps . . . . .	..	..	1	..	..	..	1	1	..	..	3
Neuralgia . . . . .	..	3	12	5	11	3	12	10	7	1	64
Overwork . . . . .	..	3	9	3	4	2	5	6	10	6	48
Pertussis . . . . .	..	..	..	..	..	..	..	1	1	..	2
Pharyngitis . . . . .	1	37	48	38	35	39	55	28	21	5	307
Pneumonia . . . . .	1	1	..	..	1	2	2	2	1	..	10
Rheumatism . . . . .	..	3	5	5	1	3	9	10	7	3	46
Scarlet Fever . . . . .	..	1	..	..	1	..	..	..	..	..	2
Skin, of the . . . . .	4	19	17	9	2	7	7	15	9	1	80
Surgical . . . . .	6	55	77	31	37	38	39	32	37	3	355
Tonsillitis . . . . .	1	22	10	28	21	19	46	21	14	3	185
Typhoid . . . . .	1	2	..	..	..	2	..	3	2	..	10
Totals . . . . .	36	444	570	367	336	387	538	422	302	55	3457
Visits . . . . .											1050
Office consultations . . . . .											2500
Total number of consultations . . . . .											3550
Calls on students not found in (not included in above) . . . . .											280
Cases not seen by the Medical Visitor . . . . .											1558

TABLE II.

## ILLNESS REPORT AS RELATED TO THE DIFFERENT SCHOOLS.

Diseases.	College.					Scientific.					Law.	Graduate.	Divinity.	Medical, Nursing, etc.	Totals.	
	1	2	3	4	Sp.	1	2	3	4	Sp.						
Appendicitis . . .	4	10	7	9	..	3	1	..	2	..	2	..	..	..	..	38
Bronchitis . . .	37	26	16	17	3	14	5	5	..	1	5	3	1	..	..	133
Chicken-pox . . .	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	2
Colds unclassified	59	60	39	25	7	11	10	2	1	1	6	2	..	..	..	223
Constipation . . .	6	8	2	2	..	..	1	..	..	..	3	1	..	..	..	23
Coryza . . . . .	55	59	37	28	8	31	34	23	5	8	5	5	..	1	..	299
Dentistry . . . .	15	4	4	8	4	3	1	1	1	1	1	..	..	..	..	43
Diarrhoea . . . .	34	30	33	19	6	8	16	7	1	2	1	..	..	..	..	157
Diphtheria . . . .	2	..	..	..	..	..	1	..	..	..	..	1	..	..	..	4
Ear, of the . . . .	8	9	7	7	2	..	3	..	..	2	1	1	..	..	..	40
Eye, of the . . . .	61	64	23	22	12	15	11	6	4	5	2	3	..	..	..	228
General Debility .	9	11	12	8	3	2	4	2	2	..	7	3	1	..	..	64
Headache . . . . .	28	31	10	1	9	3	9	1	2	3	..	1	..	..	..	98
Indigestion . . . .	90	77	59	27	34	24	20	12	5	9	7	6	2	..	..	372
Insomnia . . . . .	2	5	1	1	..	..	1	..	..	..	4	..	1	..	..	15
Jaundice . . . . .	..	6	8	1	..	..	..	..	1	..	..	..	..	..	..	11
La Grippe . . . . .	22	21	18	13	2	2	4	4	3	4	3	1	1	1	..	99
Laryngitis . . . .	5	6	4	2	..	1	1	1	..	..	1	1	..	..	..	22
Malaria . . . . .	7	2	5	1	4	..	2	1	1	..	2	1	..	..	..	26
Measles . . . . .	5	9	18	6	2	3	..	1	..	..	1	2	..	..	..	42
Miscellaneous . . .	109	84	60	50	2	13	19	9	5	10	18	21	2	4	..	406
Mumps . . . . .	1	..	..	..	..	..	..	..	..	1	1	..	..	..	..	3
Neuralgia . . . . .	15	21	10	4	6	2	2	..	..	1	2	1	..	..	..	64
Overwork . . . . .	6	6	11	5	3	1	..	1	..	..	7	7	..	1	..	48
Pertussis . . . . .	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Pharyngitis . . . .	81	61	58	25	15	19	15	12	10	5	3	3	..	..	..	307
Pneumonia . . . .	5	3	1	..	..	..	1	..	..	..	..	..	..	..	..	10
Rheumatism . . . .	15	6	6	10	1	1	1	..	1	1	3	1	..	..	..	46
Scarlet Fever . . .	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	2
Skin, of the . . . .	20	11	9	5	1	5	5	1	2	1	12	8	..	..	..	80
Surgical . . . . .	92	69	55	27	18	22	13	16	8	6	18	11	..	..	..	355
Tonsillitis . . . .	50	28	42	18	4	10	10	4	2	4	11	2	..	..	..	185
Typhoid . . . . .	2	3	2	..	..	..	1	1	..	..	..	1	1	..	..	10
Totals . . . . .	847	731	547	342	146	193	192	110	56	65	127	85	9	7	..	3457
No. of Students..	551	533	412	346	141	157	141	88	76	87	628	301	37	..	..	
% of "Sign-offs"	153	137	132	98	103	123	136	125	74	75	20	28	25	..	..	

## PRESIDENT ELIOT TO MR. MURPHY.

HARVARD UNIVERSITY,  
Cambridge, 27 November. 1901.

DEAR MR. MURPHY:—

I have already sent you estimates for the annual expenditures of the present Medical School transferred to the *three* new buildings to be given by Mr. J. Pierpont Morgan. I now send you, at your request, similar estimates for the present Medical School transferred to the *five* new buildings as proposed in the plans and estimate submitted to Mr. J. Pierpont Morgan, and on which he acted in making his great gift. Provision is made for the teaching of Comparative Anatomy and Comparative Pathology at the Medical School, this provision costing \$8,500 a year in salaries and \$2,400 a year in appropriations.

The five buildings projected are large enough to provide for a future and moderate increase in the number of candidates for the degree of M.D., for a new body of graduate students in medicine (working chiefly in laboratories), and for students of two new subjects, — Comparative Anatomy and Comparative Pathology. It is unquestionably desirable to provide at once for the subjects of Comparative Anatomy and Comparative Pathology; but those provisions *can* wait for endowment later.

I give first the larger estimates, which include appropriations and salaries for the two new subjects; and after these estimates I mention the reductions which could be made by omitting all provision, whether in salaries or appropriations, for Comparative Anatomy and Comparative Pathology.

ESTIMATES FOR THE ANNUAL EXPENDITURES OF THE MEDICAL SCHOOL  
IN ITS PROPOSED NEW BUILDINGS.

The assumptions on which these estimates are based are as follows:

1. That no material increase takes place in the prices of coal, gas, electricity, and labor, and that the present scale of salaries be maintained.

2. That the methods of instruction remain essentially what they were in 1900–01 (lecture, laboratory, and clinical methods) except as they shall be improved by greater experience, larger space, and better facilities. (The School adopted new methods and a new order of studies in 1899–1901.)

3. That a body of laboratory instruction be gradually provided for graduates in medicine with ample rooms and equipment for medical research under the guidance of the professors.

4. That the subjects of Comparative Anatomy and Comparative Pathology be taught at the Medical School; and, therefore, that a new professorship of Comparative Anatomy be established, and the laboratories of Professor Theobald Smith (now at the Bussey Institution) be transferred to the new buildings.

5. That all the funds applicable in the Medical School in 1900-01 continue to be applied in the same manner, and that the rate of interest earned on them suffer no significant reduction.

6. That the receipts from students average as large for the years 1902-12 as they were in 1900-01. (On account of the requirement first made in 1901, that every student admitted to the School shall already have earned a degree in Arts or Science, the number of students must be expected to decline somewhat for three or four years, and then to increase again slowly.)

7. That the site of the new buildings is given to the School free of encumbrance.

*(The estimates follow the order of "Medical School Payments," pp. 83-84 of the Treasurer's Statement for 1899-1900, beginning with the word "Appropriations," but are here compared with the corresponding expenditures for 1900-01.)*

APPROPRIATIONS.

	In the new buildings.	In the present building, 1900-01.
Chemistry . . . . .	\$500*	\$0*
Physiology . . . . .	2,000*	1,300*
Anatomy . . . . .	3,500	3,250
Pathology . . . . .	1,200	800
Bacteriology . . . . .	1,200	600
Obstetrics . . . . .	250	250
Gynaecology . . . . .	100	50†
Histology and Embryology . . . . .	1,200	800
Hygiene . . . . .	1,000	200‡
Pharmacology and Therapeutics . . . . .	1,200	700‡
Theory and Practice . . . . .	500	500†
Clinical Medicine . . . . .	500	325
Clinical Surgery . . . . .	250	100
Surgical Pathology . . . . .	700	500
Museum . . . . .	700	31‡
Comparative Anatomy . . . . .	1,200	0§
Comparative Pathology . . . . .	1,200	0§
	\$17,200	\$9,687

\* And fees. † New in 1900-01. ‡ Present laboratory inadequate. § New proposal.

(Items in the Treasurer's Statement 1899-1900 called "New courses," "Graduate courses," "Summer courses," and "Dental School" do not concern the present inquiry.)

## SALARIES FOR INSTRUCTION.

All present payments for salaries being maintained, the following additional salaries should be provided for:—

1 Professor	(Comparative Anatomy)	.....	\$4,500
1 Instructor	" "	.....	1,000
1 Demonstrator	" "	.....	1,000
1 Assistant	" "	.....	500
1 Instructor	(Comparative Pathology)	.....	1,000
1 Assistant	" "	.....	500
8 Assistants, one each for Chemistry, Physiology, Anatomy, Pathology, Bacteriology, Histology, Hygiene, and Pharmacology, to attend to graduate students and research . . . .			4,000
			<u>\$12,500</u>

## GENERAL EXPENSES.

In the new buildings.		In the present building, 1900-01.
Dean and Secretary . . . . .	\$1,000	\$800.00
Repairs and improvements . . . . .	8,600*	2,720.06
Janitor, 5 porters, engineer, 3 firemen, and cleaning . . . . .	16,820†	5,165.68
Fuel (\$1.50 per 1000 cubic ft. per year, with strong ventilation) . . . . .	8,600	1,705.10
Water (no elevator) . . . . .	1,500	1,008.00‡
Lighting and gas . . . . .	12,000	8,005.92
Printing . . . . .	500	297.83
Furniture . . . . .	750	268.99
Instruments and apparatus . . . . .	1,500	15.00§
Stationery and postage . . . . .	1,000	669.59
Advertising and Catalogue . . . . .	2,000	1,800.00
Insurance (on apparatus and fittings) . . . . .	1,500	761.00
Proctors . . . . .	500	400.00
Clerks, mechanics, and Laboratory attendants . . . . .	15,000	7,375.04
Electric power . . . . .	2,500	1,192.41
Freight, diplomas, and sundries . . . . .	600	791.14
Supplies, tools, and material . . . . .	3,000	1,990.58
	<u>\$77,370</u>	<u>\$39,966.34</u>

## SUMMARY.

Increase of Laboratory and Museum appropriations . . . . .	\$7,513.00
Increase of salaries . . . . .	12,500.00
Increase of general expenses . . . . .	47,403.66
	<u>\$67,416.66</u>

\* \$1.50 per 1000 cubic ft. per year.  
† Water elevator.

‡ Includes \$600 for grounds.  
§ \$976.01 in 1899-1900.



NEW RESOURCES.

Sale of the present lot on Boylston and Exeter streets . . . .	\$600,000
May be appropriated by the Corporation from the unrestricted bequest of Henry L. Pierce (it was their intention to promote the study of Comparative Medicine by this appropriation) .	300,000
May be appropriated by the Corporation from the bequest of Robert Charles Billings . . . . .	85,000
	<u>\$985,000</u>

which, at 4 per cent., would yield \$39,400.

There would remain to be provided \$28,000 a year, the income at 4 per cent. on \$700,000. This annual sum of \$28,000 might all be applied, in strict accordance with the above estimates, to salaries, wages, instruments, supplies, power, light, and heat in laboratories for advanced students and research; or to the same objects in the laboratories and clinics which train the ordinary medical student for the degree of Doctor of Medicine; or, if direct endowment of instruction were preferred, to the salaries of five selected professorships not now endowed and of the attached demonstratorships, instructorships, and assistantships.

This inquiry is limited to the expedient and appropriate increase in the expenditure of the Medical School consequent upon occupying the proposed new buildings. It takes no account whatever of new scholarships, fellowships, prizes, or publications, or of any new provisions for the comfort and health of medical students, such as a dormitory, a dining-hall, or a gymnasium.

In order, then, to carry out the whole plan simultaneously, the Corporation need in addition to the gift of Mr. Morgan:—

For land . . . . .	\$300,000
For two new buildings . . . . .	500,000
For endowment to meet the running expenses of the plant .	700,000
	<u>\$1,500,000</u>

The land the Corporation think they see their way to obtain by new gifts. The two additional buildings are not yet provided for; and the new endowment to cover running expenses is not provided. Inasmuch as the Corporation never borrow money, they are compelled to wait before attempting the execution of this large plan till the means of perfecting it are in sight.

REDUCTION OF THE ABOVE ESTIMATE.

By omitting the following items from the above estimates, a large temporary saving can be effected.

Deduct the following salaries : —

1 Professor of Comparative Anatomy . . . . .	\$4,500
1 Instructor " " . . . . .	1,000
1 Demonstrator " " . . . . .	1,000
1 Assistant " " . . . . .	500
1 Instructor of Comparative Pathology . . . . .	1,000
1 Assistant " " . . . . .	500

Deduct also the following appropriations : —

For Comparative Anatomy . . . . .	1,200
For Comparative Pathology . . . . .	1,200
	\$10,900

This sum represents a principal of \$272,500 at 4 per cent., so that, if we should forego all provisions for Comparative Anatomy and Comparative Pathology, the new endowment, exclusive of the land and the two buildings in addition to those provided for by Mr. Morgan, might be reduced from \$700,000 to \$427,500.

You will, I am sure, allow me to mention briefly the considerations in support of carrying out the whole plan now : —

1. It is an ample but not an extravagant plan. It is believed in and wished for not only by the Medical Faculty, but by the Corporation of the University, an experienced body not given to wasteful expenditure of any sort, but, on the contrary, cautious, frugal, and conservative in their whole administration, and of proved capacity to keep serviceable through centuries the endowments committed to their charge.

2. If the whole plan for the five proposed buildings can be carried out, the new medical establishment will be effective, not only for the training of medical and surgical practitioners, but for the training of medical and surgical investigators, — a new and very serviceable class of professional men. The establishment can also give needed facilities to competent men actually engaged in medical research, than which there is no more promising field of beneficent scientific inquiry.

3. With a view to increasing human control over disease, it is highly desirable to associate Comparative Anatomy and Pathology with medical-school teaching, most of the recent discoveries in medicine having depended on the study of man's relation to other creatures. As examples, I may mention the wonderful gains in the treatment of diphtheria, malaria, and yellow fever.

4. Although it is possible, after an adequate piece of land has been secured, to build the needed buildings gradually, to equip the

laboratories gradually, and to add the desirable new subjects of instruction in future years, it would be a much more serviceable and effective thing to carry out the whole project at once; for not only would direct beneficent results be sooner obtained, but the indirect effect of the establishment as an example to other institutions would be sooner produced; and this multiplication of good through the imitation of a successful benefaction secures a prodigious return on the investment made by the original benefactor.

There is no reason to doubt that Mr. Morgan's munificent intention will in some way be carried out. His gift is not really a contingent one.

---

I hope I have made it plain in this letter that I believe in adding to the present subjects treated in our American medical schools the great subjects of Comparative Anatomy and Comparative Pathology. I am convinced that the future progress of medicine and surgery is going to depend on these comparative studies. You will excuse me if I add a few quotations from great biologists. Harvey says: "Had anatomists only been as conversant with the dissection of the lower animals as they have been with that of the human body many matters that have hitherto kept them in perplexity of doubt, in my opinion, would have been freed from every kind of difficulty." Virchow, in his Moscow address, 1897, says: "Harvey, however, could not account for the passage of blood from the arteries to the veins, and it was necessary to invoke the porosity of tissues until Malpighi discovered capillary circulation. He first conceived the idea of looking at the interdigital membrane of a frog under the microscope, and perceived the capillaries allowing the blood to pass from the arteries to the veins. He at the same time recognized the blood corpuscles and the filaments of fibrin; on that day, biologic medicine was born." "Since the cellular constitution of plants and of animals has been proved, and since cells have become recognized as the essential living elements, the new science of biology has sprung up. . . . It has placed in a strong light the immeasurable importance of anatomy, even in the most delicate conditions of the body, and lastly, it has made us aware of the close similarity of life in the highest and lowest organisms, and has thus afforded us invaluable means of comparative investigation."

I remain, with great regard,

Very truly yours,

CHARLES W. ELIOT.

STARR J. MURPHY, Esq.

MR. JOHN D. ROCKEFELLER, JR., TO PRESIDENT ELIOT.

26 BROADWAY, NEW YORK,  
February 13th, 1902.

DEAR PRESIDENT ELIOT:—

The following are the figures arrived at in the interview held in my office this morning between yourself, Doctors Warren and Bowditch, Mr. Murphy and myself:—

Cost of the new Harvard Medical Plant, complete,

Land . . . . .	\$300,000
Five buildings . . . . .	1,800,000
Furnishings for the same . . . . .	50,000
Endowment . . . . .	2,800,000
Total . . . . .	<u>\$4,950,000</u>

Funds available:—

Pledge of Mr. Morgan . . . . .	\$1,185,000
Pledge of Mr. Rockefeller . . . . .	1,000,000
Present endowment . . . . .	1,000,000
Sale of present medical buildings . . . . .	600,000
From Pierce endowment fund . . . . .	350,000
From Billings endowment fund . . . . .	100,000
Total . . . . .	<u>\$4,185,000</u>
Leaving a balance to be raised, of . . . . .	\$765,000
Against which pledges reported by Doctors Warren and Bowditch up to date . . . . .	310,000
Leaving a net balance to be raised, of . . . . .	<u>\$455,000</u>

Attention was called to the fact that probably the amount of land required for the new medical plant could be purchased for materially less than \$300,000. Furthermore, that the present medical buildings and the land upon which they now stand ought to bring and doubtless will bring considerably more than \$600,000.

Upon the basis of these figures I enclose a letter of pledge from my Father.

Allow me to congratulate the University upon the splendid plans which it has prepared for its new medical plant, the carrying out of which I feel confident the friends of the University will make possible with little, if any delay. My Father is very glad to have even a small part in this splendid work.

With expressions of esteem, I am,

Very truly,

JOHN D. ROCKEFELLER, JR.

President CHARLES W. ELIOT,  
Harvard University, Cambridge, Mass.

MR. JOHN D. ROCKEFELLER, JR., TO PRESIDENT ELIOT.

26 BROADWAY, NEW YORK,  
February 18, 1902.

DEAR PRESIDENT ELIOT : —

I understand that for the erection and equipment of the five new buildings planned for the Harvard Medical School; for the purchase of the land required for these buildings, and for endowment sufficient to carry on the new work when completed, there will be required . . . . . \$4,950,000

I understand further that toward this sum you have in hand, or practically so , . . . . . 3,185,000  
leaving a balance to be procured, of . . . . . \$1,765,000

Toward this balance my Father will contribute One Million Dollars, . . . . . 1,000,000  
provided the remaining . . . . . \$765,000  
is secured in good and responsible pledges on or before Commencement Day this year.

In making this pledge my Father leaves to the discretion of the Board of Trustees whether the \$1,000,000 shall be used for the erection of the two buildings unprovided for, or for endowment, or partly for each.

Payments under this pledge will be made pro rata with payments of other contributors upon the written notice of the treasurer. This pledge will expire and payments under it cease after January 1, 1904.

Very truly,

(Signed) JOHN D. ROCKEFELLER, JR.

President CHARLES W. ELIOT,  
Harvard University, Cambridge, Mass.

MRS. COLLIS P. HUNTINGTON TO THE PRESIDENT  
AND FELLOWS OF HARVARD COLLEGE.

2 EAST FIFTY-SEVENTH STREET,  
NEW YORK, March 6, 1902.

THE PRESIDENT AND FELLOWS OF HARVARD UNIVERSITY,

GENTLEMEN : — After careful consideration of the plans which have been recently submitted to me for the construction of new buildings for and the equipment and endowment of the Harvard Medical School, I am happy to say that I have reached the conclusion that the serious and important work which is to be done there

in connection with pathology and bacteriology would have most strongly commended itself to the personal interest and the wise judgment of my deceased husband, who was always deeply interested in promoting opportunities for sincere and earnest work in the best fields of labor. I will therefore contribute the sum of two hundred and fifty thousand dollars for the construction of the Pathological and Bacteriological Laboratory, and should prefer that this amount should be paid from time to time as the construction of the building progresses, and in such manner as my son, Archer M. Huntington, may approve.

It is my understanding that the Laboratory is to be known as the "Collis P. Huntington Laboratory" and so designated by a suitable inscription upon the exterior of the building.

Trusting that this contribution will be of service in connection with the investigations, for the pursuit of which the Staff of your Medical School is so notably qualified, and that such investigations will prove to be of great and constantly increasing service in the important fields of inquiry upon pathological and bacteriological subjects which are now being explored, and will ultimately contribute to the relief of all who suffer from bodily pain, illness or injury, I remain,

Yours very truly,

ARABELLA D. HUNTINGTON.

The following subscriptions have been received (to April 1, 1902) in addition to the offers made by Mr. John Pierpont Morgan and Mr. John D. Rockefeller:—

Miss Mary S. Ames . . . . .	\$5,000
Oliver Ames . . . . .	5,000
C. W. Amory . . . . .	10,000
Anonymous . . . . .	100
Anonymous . . . . .	10,000
C. F. Ayer . . . . .	50
Frederick Ayer . . . . .	500
Robert Bacon . . . . .	25,000
Francis Bartlett . . . . .	10,000
Franklin H. Beebe . . . . .	1,000
Mrs. S. Parkman Blake . . . . .	10,000
John L. Bremer . . . . .	10,000
Mrs. John L. Bremer . . . . .	5,000
Miss Sarah Bremer . . . . .	5,000
George P. Brigham . . . . .	100
Shepherd Brooks . . . . .	1,000
Peter C. Brooks . . . . .	1,000
I. T. Burr . . . . .	1,000

Walter C. Cabot . . . . .	5,000
Mrs. Charles P. Cheney . . . . .	250
Mrs. E. S. Cheney . . . . .	1,000
W. Murray Crane . . . . .	5,000
George F. Fabyan . . . . .	25,000
Mrs. William H. Forbes . . . . .	5,000
Frederick Guild, Jr. . . . .	50
Charles Head . . . . .	1,000
Augustus Hemenway . . . . .	10,000*
Francis L. Higginson . . . . .	60,000
George Higginson . . . . .	10,000
Henry L. Higginson . . . . .	10,000
James J. Higginson . . . . .	10,000
John Hogg . . . . .	1,000
H. S. Howe . . . . .	1,000
H. H. Hunnewell . . . . .	12,500
Walter Hunnewell . . . . .	2,000
Mrs. Collis P. Huntington . . . . .	250,000
C. C. Jackson . . . . .	1,000
Eben D. Jordan . . . . .	5,000
Harris Kennedy . . . . .	100
David P. Kimball . . . . .	5,000
Gardiner M. Lane . . . . .	1,000
Amory A. Lawrence . . . . .	1,000
Elliott C. Lee . . . . .	25,000
Joseph Lee . . . . .	5,000
Arthur T. Lyman . . . . .	5,000
Mr. and Mrs. Charles Merriam . . . . .	2,000
Ogden Mills . . . . .	5,000
G. H. Monks . . . . .	1,000
Mrs. Leopold Morse . . . . .	100
Parkinson & Burr . . . . .	1,000
F. H. Peabody . . . . .	1,000
Sumner B. Pearmain . . . . .	100
W. L. Richardson . . . . .	25,000
Stephen Salisbury . . . . .	1,000
Mr. and Mrs. Frederick C. Shattuck . . . . .	50,000
Mrs. G. H. Shaw . . . . .	1,000
David Sears . . . . .	25,000
Mrs. Knyvet W. Sears . . . . .	200
Miss Mabel Simpkins . . . . .	200
Francis Skinner . . . . .	5,000
W. D. Sohler . . . . .	1,000
John T. Spaulding . . . . .	10,000
W. S. Spaulding . . . . .	10,000
James Stillman . . . . .	100,000
Moorfield Storey . . . . .	500
Nathaniel Thayer . . . . .	25,000
Mrs. Charles Van Brunt . . . . .	100
James C. White . . . . .	625
Mrs. Henry Whitman . . . . .	250
	<hr/>
	\$821,725*

\* Besides interest and taxes on a contribution of \$25,000 towards the land for the Medical School buildings, under the agreement for purchase of land.

## NEW TERMS OF THE NELSON ·ROBINSON JR. ENDOWMENT.

BAR HARBOR, MAINE,  
Aug. 22d, 1902.

TO THE PRESIDENT AND FELLOWS OF HARVARD COLLEGE: —

GENTLEMEN, — I propose gradually to make additions to the Nelson Robinson Jr. Fund; and therefore I should like to state in a somewhat simpler and more comprehensive form than heretofore the uses to which the income of the fund shall be devoted: I hereby propose the following form, to replace the previous statements made in my letters of June 26th, 1899, Feb'y 2d, 1901, Jan'y 13th, 1902, and March 18th, 1902.

1. Five thousand dollars of the income shall be added annually to the principal, to preserve the efficiency of the endowment.
2. Nelson Robinson Jr. Hall shall be kept in repair, and well equipped, and in a high state of efficiency as regards heat, light, ventilation, service, collections, and competent curators and assistants.
3. One travelling fellowship and one graduate scholarship shall be annually provided, the stipends being fixed from time to time by the President and Fellows; and two more fellowships and two more scholarships may be annually provided if the President and Fellows think fit.
4. The salary of the professor of architecture who has charge of Nelson Robinson Jr. Hall shall be paid.
5. The salary of the professor of landscape architecture shall be paid.
6. After the above uses have been provided for, the income, if any remain, shall be used for the following objects in the order named: —
  - (a) To pay the salaries of additional teachers employed in Nelson Robinson Jr. Hall.
  - (b) To pay retiring allowances in the department of architecture, or in any other department.

Does the above statement of uses seem to you satisfactory, and will you accept it in lieu of all previous statements of my wishes?

If you accept this statement, I shall immediately make an addition of \$50,000 to the fund, and shall be glad to have this arrangement take effect August 1st, 1901.

Yours truly,

(Signed) NELSON ROBINSON.

VOTE OF THE CORPORATION, SEPTEMBER 2, 1902.

*Resolved*, That the Corporation gladly accept the terms upon which the income of the Nelson Robinson Jr. Fund shall be expended, as those terms are stated in the foregoing letter, in lieu of those contained in former letters from Mr. Robinson, and record the opinion that they are in all respects judicious, far seeing, liberal, and comprehensive.



# INDEX.

	PAGE
<b>Admission examinations.</b> See the appropriate department of the University.	
<b>Admission requirements.</b> See the appropriate department of the University.	
<b>Appointments</b> . . . . .	817-831
<b>ARTS AND SCIENCES, FACULTY OF, Dean's report</b> . . . . .	88, 65
<b>Additions to the teaching force</b> . . . . .	87
<b>Admission requirements</b> . . . . .	95
<b>Appointments</b> . . . . .	817
<b>Courses of Instruction</b> . . . . .	65-95
<b>Courses of instruction, distribution of Graduates and Undergraduates</b> among . . . . .	18, 19
<b>Courses of instruction, increased range and variety of</b> . . . . .	23
<b>Courses of instruction, relative cost of large and small</b> . . . . .	108
<b>Harvard College, no separate body of instruction for</b> . . . . .	22
<b>Methods of instruction in</b> . . . . .	21
<b>Arts and Sciences, one body of instruction in</b> . . . . .	17
<b>ARNOLD ARBORETUM, Director's report</b> . . . . .	48, 247
<b>Association of American Universities</b> . . . . .	168
<b>ATHLETIC SPORTS,</b>	
<b>Chairman's report, for the Committee on the Regulation of</b> . . . . .	39, 126
<b>Coaches and Trainers</b> . . . . .	133
<b>Committee on the Regulation of</b> . . . . .	381
<b>Eligibility rules</b> . . . . .	132
<b>Expenditure for</b> . . . . .	40
<b>Foot-ball ethics</b> . . . . .	40
<b>Foot-ball injuries</b> . . . . .	40, 130
<b>Gate-money, use of surplus from</b> . . . . .	40
<b>Grounds and buildings</b> . . . . .	132
<b>Number of students engaged in</b> . . . . .	126
<b>Receipts and expenditures</b> . . . . .	127
<b>Austin Hall, proposed addition to</b> . . . . .	48
<b>Bachelor of Arts, degree of,</b>	
<b>Requirements for</b> . . . . .	24, 88, 100, 115
<b>Standard not to be lowered</b> . . . . .	28
<b>Three years' course for</b> . . . . .	26, 27
<b>Bachelor of Science, degree of, after five years in the College and the Sci-</b> <b>entific School</b> . . . . .	108
<b>Beale, Joseph H., Jr., organizer of Chicago University Law School</b> . . . . .	44
<b>Birth-rate in families of Harvard graduates as indicated by the number of</b> <b>their surviving children</b> . . . . .	31
<b>Böcher, Ferdinand, death of</b> . . . . .	5

	PAGE
<b>BOTANIC GARDEN, Director's report</b> . . . . .	48, 242
Accessions . . . . .	244
Cuban experiment station . . . . .	243
Fund needed . . . . .	246
Gifts . . . . .	245
Head Gardener's statement . . . . .	242
Hunnewell, H. H., death of . . . . .	245
Boylston Hall, addition to . . . . .	49
Brattle Street Reversion . . . . .	60
<b>BUSSEY INSTITUTION, Dean's report</b> . . . . .	46, 213
Appointments . . . . .	380
<b>Briggs, Le Baron Russell, resignation of, as Dean of Harvard College, and     appointment as Dean of Faculty of Arts and Sciences</b> . . . . .	8, 9, 119
<b>CHEMICAL LABORATORY, Director's report</b> . . . . .	49, 250
Boylston Hall, addition to . . . . .	253
Publications . . . . .	252
<b>Cobb, Richard, appointed Chairman of Appointment Committee</b> . . . . .	38
<b>Coley, Dr. William B.</b> . . . . .	35, 37
<b>Commencement week, proposed changes in</b> . . . . .	60
<b>Congress, Library of, catalogue cards from</b> . . . . .	47, 234
<b>Curry, Samuel Silas</b> . . . . .	171
<b>Deaths</b> . . . . .	5-8, 104, 126, 171, 279, 314, 316
<b>Degree, as requirement for admission to professional schools</b> . . . . .	28, 43, 45, 207
<b>DENTAL SCHOOL, Dean's report</b> . . . . .	208
Administrative Board . . . . .	330
Admission requirements . . . . .	45, 211
Appointments . . . . .	329
Courses of instruction . . . . .	208
Finances . . . . .	46
Infirmary . . . . .	209
Mechanical department . . . . .	210
Operative department . . . . .	209
Registration statistics . . . . .	208
<b>Discipline</b> . . . . .	99, 115, 124
<b>DIVINITY SCHOOL, Dean's report</b> . . . . .	42, 171
Appointments . . . . .	325
Courses of instruction in 1901-02 . . . . .	178
History of Religions . . . . .	171
Pecuniary aid . . . . .	42, 172
Registration, effect of improved standards on . . . . .	42, 172
Registration statistics . . . . .	176
Summer School of Theology . . . . .	177
Tuition charge . . . . .	42, 172
Udenominational character . . . . .	42, 175
<b>Doctor of Philosophy, degree of, conferred at Radcliffe College</b> . . . . .	313
<b>Doctor of Philosophy, instruction by</b> . . . . .	91
<b>Doctors of Philosophy, publication of theses of</b> . . . . .	168
<b>ENGINEERING, DIVISION OF, Chairman's report</b> . . . . .	50, 257
Summer courses in . . . . .	51, 259
<b>Expenditure, apportionment of</b> . . . . .	10-17

	PAGE
Examination Proctors, Board of . . . . .	324
FOGG ART MUSEUM, Director's report . . . . .	56, 306
GEOLOGY AND GEOGRAPHY, DEPARTMENT OF, Chairman's report . . . . .	55, 285
Publications . . . . .	290
Gifts . . . . .	52, 54, 245, 249, 293, 297-299, 302, 303, 315
GRADUATE SCHOOL, Dean's report . . . . .	41, 185
Administrative Board . . . . .	185, 324
Age of Graduate students . . . . .	157, 163
Birthplaces of students . . . . .	41, 149
Colleges and Universities whence students came . . . . .	142, 148
Degrees, Divisions and Departments in which recommendations were made for . . . . .	152
Degrees held by students . . . . .	41, 147
Degrees, number of recommendations for . . . . .	150
Doctor of Philosophy, degree of, recipients in 1903 . . . . .	153
Doctors of Philosophy, age of . . . . .	157
Fellowships and scholarships . . . . .	158, 164
Graduates' Quadrangle or Hall needed . . . . .	169
Growth of . . . . .	169
Instructorships and Assistantships . . . . .	166
Migration of students . . . . .	147
Percentage of students from other colleges . . . . .	146
Percentage of students in their first and following years . . . . .	141
Registration statistics . . . . .	136, 169
Resident students doing full or partial work . . . . .	188
GRAY HERBARIUM, Curator's report . . . . .	47, 239
Publications . . . . .	240
Greenough, James Bradstreet, death of . . . . .	7, 314
Hart, John Goddard, appointed Secretary of the Faculty of Arts and Sciences . . . . .	38
HARVARD COLLEGE, Dean's report . . . . .	38, 104
Administrative Board . . . . .	115, 323
Admission examinations, division of preliminary, between two years . . . . .	114
Admission examinations, division of final, between June and September, . . . . .	114
Admission examinations, statistics of . . . . .	108
Admission requirements . . . . .	38, 95
Briggs, L. B. R., resignation of, as Dean, . . . . .	119
Deaths . . . . .	104
Discipline . . . . .	115
Dropped students . . . . .	115
Highest scholars . . . . .	119
Hurlbut, Byron Satterlee, appointed Dean . . . . .	38
Instruction in, no separate body of . . . . .	22
Registration statistics . . . . .	104
Special students . . . . .	106
Students transferred from Lawrence Scientific School . . . . .	107
Three years' course . . . . .	26, 27, 104
HARVARD UNION . . . . .	57
Hayes, John Joseph, death of . . . . .	8
Henry, Prince of Prussia, degree conferred on . . . . .	64
Higginson, Francis L., gift of . . . . .	52

	PAGE
Hunnell, H. H., death of . . . . .	245
Huntington, Mrs. Collis P. . . . .	36, 343
Hurlbut, Byron Satterlee, appointed Dean of Harvard College . . . . .	38
Hyatt, Alpheus, death of . . . . .	7, 279
Illness report . . . . .	334
JEFFERSON PHYSICAL LABORATORY, Director's report . . . . .	50, 255
LAW SCHOOL, Dean's report . . . . .	43, 181
Admission requirements . . . . .	28, 43
Appointments . . . . .	325
LAWRENCE SCIENTIFIC SCHOOL, Dean's report . . . . .	39, 121
Administrative Board . . . . .	323
Admission requirements . . . . .	39, 123
Admission to, new subjects that may be offered for . . . . .	124
Buildings for use of . . . . .	39, 124
Death . . . . .	125
Discipline . . . . .	124
General Science group . . . . .	99, 422
Harvard College, relation to . . . . .	99
Registration statistics . . . . .	121
LIBRARY, Librarian's report . . . . .	46, 214
Accessions . . . . .	218
Archives . . . . .	237
Boston Medical Library . . . . .	231
Catalogue cards, coöperative use of . . . . .	47, 234
Catalogue Department . . . . .	233
Committee appointed to study Library's needs . . . . .	214
Congress, Library of, catalogue cards from . . . . .	47, 234
Education, reference library of . . . . .	233
Financial condition . . . . .	235
Gifts . . . . .	218, 230
Growth of . . . . .	47, 219
Harvard Collection . . . . .	237
"Live" and "dead" books . . . . .	215
Lowell Memorial Library . . . . .	233
Need for a new building . . . . .	46, 214
Ordering Department . . . . .	235
Publications . . . . .	217
Purchases . . . . .	222
Radcliffe College, use of books by . . . . .	229
Reference libraries . . . . .	224
Shelf Department . . . . .	233
Sunday use of reading-room . . . . .	229
Use of books in College Library . . . . .	47, 225
Living expenses in Cambridge . . . . .	58
MEDICAL SCHOOL, Dean's report . . . . .	44, 187
Administrative Board . . . . .	187, 329
Admission requirements, effect of . . . . .	45, 207
Anatomy . . . . .	188
Appointments . . . . .	325
Bacteriology . . . . .	190

	PAGE
Boylston Medical prizes . . . . .	200
Building . . . . .	187
Chemistry . . . . .	192
Clinical Medicine . . . . .	198
Comparative Pathology . . . . .	196
Courses of instruction . . . . .	200
Experimental Pharmacology and Therapeutics . . . . .	192
Final examination statistics . . . . .	204
Fourth year to be elective . . . . .	44, 185
Histology and Embryology . . . . .	189
Hygiene . . . . .	198
Museum . . . . .	199
Pathology . . . . .	198
Physiology . . . . .	187
Publications . . . . .	187-198
Registration statistics . . . . .	208
Scholarships and fellowships . . . . .	199
Surgery . . . . .	196
<b>MEDICAL SCHOOL BUILDINGS . . . . .</b>	<b>32-37, 185, 336-345</b>
Committee on . . . . .	34
Land acquired for . . . . .	33
Subscriptions for . . . . .	344
<b>MEDICINE, FACULTY OF, Dean's report . . . . .</b>	<b>44, 185</b>
Degrees, number of recommendations for, in 1902 . . . . .	186
<b>MINERALOGICAL MUSEUM and LABORATORIES OF MINERALOGY and PETROGRAPHY, Curator's report . . . . .</b>	<b>57, 311</b>
Moore, Edward Caldwell . . . . .	48, 171
Moore, George Foot . . . . .	171
Morgan, J. P., gift of . . . . .	34
Murphy, Start J. . . . .	85, 336
<b>MUSEUM OF COMPARATIVE ZOOLOGY, Keeper's report . . . . .</b>	<b>54, 277</b>
Goodrow, Eli, death of . . . . .	279
Hyatt, Alpheus, death of . . . . .	279
Maldive Islands, expedition to . . . . .	54, 278
Publications . . . . .	278, 332
<b>MUSEUM OF FINE ARTS, TRUSTEES OF . . . . .</b>	<b>331</b>
<b>OBSERVATORY, Director's report . . . . .</b>	<b>53, 265</b>
Arequipa . . . . .	272
Blue Hill Meteorological Observatory . . . . .	273
Boyden department . . . . .	272
Bruce photographic telescope . . . . .	272
Draper memorial . . . . .	270
Fire protection . . . . .	275
Gifts . . . . .	266, 267
Heating equipment . . . . .	275
Instruments . . . . .	267
Library . . . . .	273
Photographic collection, new building for . . . . .	54, 266
Publications . . . . .	275
Telegraphic announcements . . . . .	274
Time service . . . . .	274

	PAGE
Ordinary degrees conferred in 1899, 1900, 1901, and 1902 . . . . .	333
Overseers, Board of, on the requirements for the degree of A.B. . . . .	27
Overseers, suffrage for . . . . .	9
Parkman Professorship of Theology . . . . .	43
<b>PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY AND ETHNOLOGY,</b>	
Curator's report . . . . .	292
Addition to the building needed . . . . .	55, 300
Gifts . . . . .	293, 297-299
Preachers to the University . . . . .	331
Proctors . . . . .	324
Professional schools, admission requirements . . . . .	28, 43
Professorships, the most desirable endowments . . . . .	61
<b>PSYCHOLOGICAL LABORATORY . . . . .</b>	<b>53, 262</b>
<b>RADCLIFFE COLLEGE, Dean's report . . . . .</b>	<b>57, 312</b>
Academic Board . . . . .	314
Admission examinations . . . . .	313
Bertram Hall . . . . .	314
Doctor of Philosophy, degree of . . . . .	313
Fund needed . . . . .	315
Gift from Mrs. Emmerton of Salem . . . . .	315
Greenough, James B., death of . . . . .	314
Registration statistics . . . . .	312
Resignations . . . . .	8, 316
Robinson, Nelson, Jr., endowment, new terms of . . . . .	63, 346
Rockefeller, John D. . . . .	35, 36
Rockefeller, John D., Jr. . . . .	35, 36, 342, 343
Salaries for instruction in Arts and Sciences . . . . .	17
Schiff, Jacob H. . . . .	55
<b>SEMITIC MUSEUM, Curator's report . . . . .</b>	<b>55, 301</b>
Building completed . . . . .	301
Explorations desirable . . . . .	56, 303
Gifts . . . . .	302, 303
Smith, Clement Lawrence, administrative services of . . . . .	9
Squam Lake, Engineering courses at . . . . .	51, 259
Stillman Infirmary . . . . .	59
Thayer, James Bradley, death of . . . . .	6
Thayer, Joseph Henry, death of . . . . .	5, 171
Three years' course . . . . .	26, 27
Theses, publication of . . . . .	163
Treasurer's Statement . . . . .	60
Tweed, Charles H. . . . .	37
Vacation work, proposed extension of . . . . .	52
White, James Clarke, resignation of . . . . .	8
<b>ZOOLOGICAL LABORATORY, Director's report . . . . .</b>	<b>54, 281</b>
Publications . . . . .	283

# TREASURER'S STATEMENT.



1902.





## TREASURER'S STATEMENT.

TO THE BOARD OF OVERSEERS OF HARVARD COLLEGE:—

The Treasurer of the College submits the Annual Statement of the financial affairs of the University, for the year ending July 31, 1902, in the usual form.

The Funds separately invested, with the income thereof, are as follows:—

	UNIVERSITY.	Principal. July 31, 1902.	Income.
<b>George B. Dorr,</b>			
University Houses and Lands, . . . . .		\$115,966.56	\$5,553.35
<b>George Draper (part),</b>			
University Houses and Lands, . . . . .		8,668.59	358.61
<b>John Cowdin,</b>			
Real Estate, Haymarket Square, Boston, . . . .		22,000.00	2,023.22
<b>John C. Gray,</b>			
University Houses and Lands, . . . . .		25,000.00	1,197.19
<b>Insurance and Guaranty,</b>			
University Houses and Lands, . . . . .		132,288.30	6,334.96
<b>Walter Hastings,</b>			
Real Estate, Sacramento St., Cambridge, . . . .		20,000.00	1,310.14
<b>Joseph Lee,</b>			
University Houses and Lands, . . . . .		10,000.00	478.88
<b>Francis E. Parker,</b>			
University Houses and Lands, . . . . .		113,817.44	5,450.44
<b>William F. Weld,</b>			
University Houses and Lands, . . . . .		100,000.00	4,788.75

### COLLEGE.

<b>Charles Eliot Norton Fellowship,</b>			
\$15,000 Northern Pacific-Great Northern Joint 4's (C. B. & Q. collateral) of 1921, . . . . .		14,100.00	300.00
<b>Pennoyer Scholarships (part),</b>			
Pennoyer Annuity in England, . . . . .		4,444.44	128.00
<b>Jonathan Phillips's Gift,</b>			
\$10,000 City of Boston 3½'s of 1920, . . . . .		10,000.00	350.00
Amounts carried forward, . . . . .		\$576,285.33	\$28,273.54

Amounts brought forward, . . . . .	\$576,285.33	\$28,273.54
<b>Professorship of Hygiene (part),</b>		
Policy of Mass. Hospital Life Insurance Co., . .	5,000.00	200.00
\$16,000 Northern Pacific-Great Northern Joint 4's (C. B. & Q. collateral) of 1921, . . . . .	15,681.85	640.00
<b>Scholarship of the Class of 1883,</b>		
\$5,000 Brookline Gas Light Co. Gen'l M. 5's of 1918,	5,000.00	250.00
<b>Stoughton Scholarship (part),</b>		
Real Estate in Dorchester, . . . . .	1,294.30	
<b>Samuel Ward's Gift,</b>		
Ward's (Bumkin) Island, Boston Harbor, . . .	1.00	
<b>David Ames Wells (part),</b>		
\$4,000 Adams Express Co. Deb. 4's of 1948 (sold during year), . . . . .		160.00
2,000 Buffalo City Gas Co. 1st M. 5's of 1947 (sold during year), . . . . .		50.00
1,000 The Electric Corporation 7's of 1992, . . . .	1,000.00	70.00
20 shares Illinois Central R.R. (sold during year),		120.00
17 " Manhattan R'y (sold during year), . .		51.00
15 " Northern Pacific R'y, preferred (sold during year), . . . . .		45.00
21 " Pennsylvania R.R. (sold during year),		36.75
20 " West Virginia Central & Pittsburg R'y (sold during year), . . . . .		40.00
33 " The Pullman Co. (sold during year),		198.00
40 " Adams Express Co. (sold during year),		160.00
25 " Illinois & Miss. Telegraph Co. (sold during year), . . . . .		37.50
50 " Western Union Telegraph Co. (sold during year), . . . . .		187.50
10 " The Electric Corporation, . . . . .	.40	
8 " General Electric Co. (sold during year),		48.00
16 " American Light & Traction Co., pref. (sold during year), . . . . .		48.00
83 " American Surety Co. (sold during year),		249.00
10 " New York Security & Trust Co. (sold during year), . . . . .		230.00
11 " Walter A. Wood M. & R. Machine Co.,	550.00	
<b>T. Jefferson Coolidge, for Research in Physics,</b>		
625 shares Massachusetts Electric Companies, pref.,	57,500.00	2,500.00

## LIBRARY.

<b>Iohabod Tucker (part),</b>		
Policy of Mass. Hospital Life Insurance Co., . . .	5,000.00	200.00

## LAW SCHOOL.

<b>James Barr Ames Prize (part),</b>		
Personal Note, . . . . .	2,700.00	112.00
Amounts carried forward, . . . . .	\$670,012.88	\$38,906.29

Amounts brought forward, . . . . . \$670,012.88 \$88,906.29

MEDICAL SCHOOL.

<b>Calvin and Lucy Ellis (part),</b>		
40,000 Northern Pacific-Great Northern Joint 4's (C. B. & Q. collateral) of 1921, . . . . .	26,585.00	1,600.00
Real Estate in Boston, . . . . .	26,400.00	418.48
Real Estate in Eden, Bar Harbor, Maine, . . . .	10,000.00	
<b>George C. Shattuck (part),</b>		
\$25,000 Kansas City, Fort Scott & Memphis R. R. Cons. M. 6's of 1928 (\$208.70 deducted from in- come for sinking premium), . . . . .	30,296.30	1,296.80

OBSERVATORY.

<b>Advancement of Astronomical Science (1902) (part),</b>		
15 shares Calumet & Hecla Mining Co., . . . . .	9,000.00	75.00
\$3,000 Mortgage Note, . . . . .	3,000.00	90.00
5,000 Northern Pacific-Great Northern Joint 4's (C. B. & Q. collateral) of 1921, . . . . .	4,800.00	100.00

PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY  
AND ETHNOLOGY.

<b>Peabody Building (part),</b>	} \$54,000 Kansas & Mis- souri R. R. 1st M. 5's of 1922,	{	11,512.72	623.32
<b>Peabody Collection (part),</b>			19,218.64	1,038.84
<b>Peabody Professor (part),</b>			19,218.64	1,038.84
<b>Thaw (part) (\$8.48 deducted from income for sinking premium),</b>				
\$20,000 Girard Point Storage Co. 1st M. 3½'s of 1940,			20,322.06	691.52

SPECIAL FUNDS.

<b>Bussey Trust,</b>		
Real Estate, . . . . .	392,710.18	23,677.08
<b>Robert Troup Paine (accumulating) (\$170.18 de- ducted from income for sinking premiums),</b>		
\$38,000 Massachusetts 3½'s of 1913, . . . . .	39,664.63	1,185.25
5,000 " " 1916, . . . . .	5,291.95	154.15
3,000 " " 1938, . . . . .	3,325.42	47.92
<b>Fund of the Class of 1834,</b>		
Policy of Mass. Hospital Life Insurance Co., . . .	1,000.00	40.00
<b>Fund of the Class of 1844,</b>		
Policy of Mass. Hospital Life Insurance Co., . . .	6,500.00	260.00
<b>Fund of the Class of 1853,</b>		
Policy of Mass. Hospital Life Insurance Co., . . .	3,725.00	149.00
<b>Charles L. Hancock Bequest (part),</b>		
Real Estate in Chelsea, . . . . .	710.00	
<b>Calvin and Lucy Ellis Aid (part),</b>		
Real Estate in Boston, . . . . .	26,400.00	418.48
Amounts carried forward, . . . . .	\$1,329,698.42	\$66,809.32

Amounts brought forward, . . . . .	\$1,329,693.42	\$66,809.32
<b>Price Greenleaf.</b> (\$961.20 deducted from income for sinking premiums.) The total amount of this Fund is \$788,865.31, which is invested as follows:—		
\$12,200 Rutland R. R. 6's of 1902, . . . . .	12,281.32	569.33
8,000 Chicago, Burl. & Quincy R. R. 4's of 1922,	2,880.00	120.00
290 shares Northern R. R. (N. H.), . . . . .	29,290.00	1,740.00
817 " Boston & Maine R. R., . . . . .	48,724.00	2,219.00
860 " Boston & Lowell " . . . . .	46,800.00	2,880.00
237 " Fitchburg R. R., preferred, . . . . .	22,806.27	1,185.00
855 " Old Colony " . . . . .	63,190.00	2,485.00
23 " N. Y. Central & Hudson River R. R., .	2,685.00	103.75
52 " West End Street Railway, preferred, .	4,205.56	206.00
34 " Central Vermont R'y, . . . . .	428.72	
600 " Pennsylvania R. R., . . . . .	44,587.50	900.00
15 " Boston Real Estate Trust, . . . . .	20,703.75	675.00
100 " Paddock Building Trust, . . . . .	10,000.00	291.72
\$70,000 American Bell Telephone Co. 4's of 1908,	70,773.70	2,671.05
70,000 Broadway Realty Co. Purchase money		
1st M. 5's of 1926, . . . . .	74,513.12	3,315.78
26,000 Burl. & Mo. R. R. in Neb. non ex. 6's of 1918, . . . . .	27,027.83	1,148.86
43,500 Central Vermont R'y 1st M. 4's of 1920, .	37,845.00	1,740.00
2,000 Chicago, Burl. & Quincy R. R. 3½'s of 1949 (sold during year), . . . . .		68.12
50,000 Chic. Junc. R'y's & Union Stock Yards 5's of 1915, . . . . .	47,000.00	2,500.00
50,000 Metropolitan Tel. & Tel. Co. 1st M. 5's of 1918, . . . . .	49,750.00	2,500.00
25,000 New England Tel. & Tel. Co. 6's of 1906, .	25,296.87	1,425.78
84,000 New York Central & Hudson River R. R. (Michigan Central Collateral) 3½'s of 1908,	28,412.10	1,190.00
82,000 Northern Pacific—Great Northern Joint 4's (C. B. & Q. collateral) of 1921, . . . . .	19,993.55	1,280.00
7,500 Pennsylvania R. R. conv. 3½'s of 1912 (50% paid), . . . . .	3,750.00	
50,000 Union Pacific R. R. 1st M. & L. G. 4's of 1947,	44,625.00	2,000.00
50,000 Note of Massachusetts Cotton Mills . . .	50,000.00	1,024.06
Cash in City Trust Co., . . . . .	1,056.02	25.44
Cash in New England Trust Co., . . . . .		61.43
" Old Boston National Bank . . . . .	690.00	
<b>Totals, . . . . .</b>	<b>\$2,118,558.73</b>	<b>\$101,136.64</b>

The other Funds are invested as a whole. The general investments are stated in detail on pages 38, 39, 40, and 41 of this report. The usual summary of them, and of their income, is as follows:—

Investments.	Principal, Aug. 1, 1901.	Principal, July 31, 1902.	Income.
Notes, Mortgages, &c., . . . . .	\$983,000.00	\$728,000.00	\$51,225.13
United States Bonds, . . . . .	464,955.88	462,249.39	13,293.51
Railroad Bonds, . . . . .	8,867,228.70	4,445,544.36	183,914.29
Sundry Bonds, . . . . .	1,512,087.89	1,753,980.52	70,060.13
Railroad Stocks, . . . . .	568,998.46	377,899.91	19,956.50
Manufacturing and Telephone Stocks,	39,022.29	94,429.54	4,161.00
Real Estate Trust Stocks, . . . . .	278,595.34	400,129.72	6,245.06
Real Estate, . . . . .	2,753,541.92	2,751,541.92	155,526.69
Brattle Street Reversion (1918), . .	1,015.00		
Advances to <b>Bussey Trust</b> , . . . . .	29,785.51	29,785.51	893.56
“ “ <b>Calvin &amp; Lucy Ellis</b>			
Real Estate, . . . . .		63.37	6.28
“ “ <b>Medical School Under-</b>			
<b>taking</b> , . . . . .		472,583.60	6,802.77
“ “ <b>Observatory</b> , . . . . .		2,921.85	
“ “ <b>Sch. of Veterinary Med.</b> ,	24,406.01	14,114.90	1,220.30
“ “ <b>Peabody Museum of</b>			
<b>Am. Archaeology and</b>			
<b>Ethnology</b> , . . . . .	1,607.30	2,278.60	80.36
“ “ <b>Botanic Department</b> , . .	18,625.67	5,307.35	488.44
“ “ <b>Dining Hall Association</b> ,	12,522.66	46,224.69	1,675.01
“ “ <b>Randall Hall</b> “	33,431.27	34,302.27	2,105.25
“ “ <b>Rotch Laboratory</b> , . .	6,637.62		166.88
“ “ <b>Classical Publication Fund</b>			
<b>of the Class of 1856</b> ,		968.91	53.95
“ “ <b>Sundry Accounts</b> , . . . . .		129.15	
<b>Baring Brothers &amp; Company</b> , . . . . .	2,682.59	2,893.16	82.57
<b>Term Bills due in October</b> , . . . . .	236,731.03	238,881.23	
“ “ <b>overdue</b> , . . . . .	9,065.28	7,765.25	
<b>Cash in Suffolk National Bank</b> , . . .	26,480.66		50.40
“ <b>National Union Bank</b> , . . . . .	185,570.67	10,902.73	5,212.08
“ <b>Old Boston National Bank</b> , .		96,114.57	1,191.92
“ <b>hands of Bursar</b> , . . . . .	29,035.72	16,975.62	
<b>Totals of general investments</b> , . .	\$11,084,977.47	\$11,995,983.12	\$524,412.08
<b>Totals of special investments</b> , . .	2,034,561.14	2,118,558.73	101,136.64
<b>Amounts</b> , . . . . .	\$13,119,538.61	\$14,114,541.85	\$625,548.72

At the meeting of the Corporation, October 26, 1891, it was

“ *Voted*, that the sum of \$23,341.97 being the net gain from sales of bonds at a profit, heretofore credited to the account of Railroad Bond Premiums, be transferred as of July 31, 1891, to a new account to be called ‘Gains and Losses for General Investments,’ which account shall be credited with all gains and charged with all losses hereafter arising from sales of property belonging to the general investments. As this account belongs pro rata to all the Funds sharing in general investments it is not to be allowed interest

when its balance is on the credit side nor to be charged with interest when its balance is on the debit side."

The gains arising from the sale during the year of the "Brattle Street Reversion" (1918), amounting to \$295,816.25, and from the sale of certain railroad bonds, amounting to \$7,473.74, were credited to "Gains and Losses for General Investments" in accordance with the terms of the vote of October 26, 1891. The balance to the credit of that account August 1, 1902, was \$488,748.07.

The sums of \$12,690.11 and \$1,343.56 have been deducted from the income of all bonds bought at a premium and held respectively as general and special investments, and have been applied, as the fair yearly repayment from income, towards sinking the whole of these premiums at the maturity of the bonds.

The net income of the general investments has been divided at the rate of  $4\frac{80}{100}$  per cent. among the Funds to which they belong (excluding "Gains and Losses for General Investments"), after allowing special rates to certain temporary Funds and balances. The fraction, which was \$350.86, has been placed as usual to the credit of the University account.

The rate of income compared with that for 1900-01 shows an increase of ten one-hundredths of one per cent.

The following table shows the income available for the departments dependent upon the College proper, and the expenditures in those departments; the income and the expenditure for the Lawrence Scientific School and the College being combined in the College account: —

Interest on Funds for

University Salaries and Expenses, . . . . .	\$69,807.29
Library Salaries and Expenses (not books), . . . . .	28,198.40
College Salaries and Expenses, . . . . .	73,716.05
Gymnasium, and repairs on College buildings, . . . . .	none.
Receipts from students, . . . . .	546,443.28

Sundry receipts, as follows: —

Gifts for Salaries and Expenses, . . . . .	\$2,972.12
Use of buildings (not University Houses and Lands), . . . . .	2,760.00
Sales of catalogues, pamphlets, &c., . . . . .	3,932.15
Sundry receipts and repayments, . . . . .	4,686.07
	<u>14,350.34</u>
	<u>\$732,515.36</u>

Expended for		
University Salaries and Expenses, . . . . .	\$90,592.73	
Library Salaries and Expenses (not books), . . . . .	44,376.54	
College Expenses, . . . . .	130,660.83	
College Salaries, for instruction, . . . . .	389,625.34	
Gymnasium Expenses, . . . . .	8,941.04	
Repairs, insurance and cleaning on College buildings not valued in Treasurer's books, . . . . .	51,880.11	
Scholarships paid by the University, . . . . .	3,400.00	
Exhibitions " " " . . . . .	900.00	\$720,376.59
Balance, showing the surplus for the year, which has been applied to the payment of the year's deficit of the School of Veterinary Medicine, \$1,847.66, and \$10,291.11 of its debt, . . . . .		
		\$12,188.77

The following table shows the results for the years 1901-02 and 1900-01 in the several Departments of the University.

Departments.	1901-02.		1900-01.	
	Surplus.	Deficit.	Surplus.	Deficit
University, College, Lawrence Scientific School and Library. (The surplus for 1901-02 has been applied to the pay- ment of the year's deficit of the School of Veterinary Medicine, \$1,847.66, and \$10,291.11 of its debt) . . . . .	\$12,188.77		\$2,347.91	
Divinity School . . . . .	9,035.76		223.33	
Law School . . . . .	41,959.67		33,225.35	
Medical School . . . . .		\$4,355.62	7,609.83	
Dental School . . . . .		5,345.53	4,086.98	
Bussey Institution, after paying in 1901-02 \$7,357.27 towards the cost of new greenhouses . . . . .		348.82	3,767.09	
Museum of Comparative Zoölogy . . . . .	2,625.43		2,453.50	
Observatory . . . . .		5,714.65	548.44	
Peabody Museum of American Archae- ology and Ethnology . . . . .		671.30	\$968.29	
School of Veterinary Medicine . . . . .		1,847.66	8,456.45	

*Gifts have been received during the year as follows:—*

GIFTS TO FORM NEW FUNDS OR TO INCREASE OLD ONES.

From the estate of Robert Henry Eddy, \$11,500 additional, on account of his unrestricted residuary bequest.

From the estate of Henry L. Pierce, \$3,000 additional, on account of his unrestricted residuary bequest.

From the estate of Henry Villard, \$50,000, his unrestricted bequest.

From the Treasurer of the Class Subscription Fund, \$147.50, to be added to the Fund.

From T. Jefferson Coolidge, securities valued at \$57,500, to establish a fund, the income of which shall be used "primarily for laboratory expenses of original investigations by members of the Jefferson Physical Laboratory staff."

From Miss Amy Lowell, \$25, to be added to the Lowell Fund for a Botanic Garden.

From James Loeb, securities valued at \$14,100, for the endowment of the Charles Eliot Norton Fellowship.

From ten survivors of the Class of 1841, \$1,000, to be added to the Fund for the Scholarship of the Class of 1841.

From the estate of Charles L. Jones, of Cambridge, Mass., \$30,000, his bequest for founding six scholarships for undergraduate students in the College, to be called the C. L. Jones Scholarships.

From James Byrne, \$5,000, to establish the Scholarship of the Class of 1877, the income thereof to be given to a needy undergraduate of the highest scholarship.

From John Haven, of the Class of 1841, \$10,000, to found a Scholarship in memory of his father, John Appleton Haven, of Portsmouth, N. H., a graduate of the Class of 1813; the income thereof to be applied towards the support and education of a needy undergraduate of Harvard College, preference in the assignment to be given, first, to any one bearing the name of Haven, second, to a descendant of a member of the Class of 1841.

From George Sullivan Bowdoin, \$15,000, to be added to the principal of the Bowdoin Prize Fund for Dissertations, founded by Gov. James Bowdoin.

From the estate of Mrs. S. D. Warren, \$5,000, her bequest for the Peabody Museum of American Archaeology and Ethnology.

For Medical School Endowments (in addition to gifts, amounting to \$189,024.79, which may be used for land, buildings, equipment or endowments and are separately entered in this year's Statement among "Gifts for immediate use") as follows: —



From John D. Rockefeller, \$308,758.17, for new buildings and endowments for the Medical School.

For the George Higginson Professorship of Physiology, from Mr. Higginson's children, as follows:—

Mrs. S. Parkman Blake . . . . .	\$10,000
Francis L. Higginson . . . . .	60,000
George Higginson . . . . .	10,000
Henry L. Higginson . . . . .	10,000
James J. Higginson . . . . .	10,000
	<u>\$100,000</u>

From David Sears, \$25,000, to establish the David Sears Fund for Instruction in Neurology.

From Mrs. Frederick C. Shattuck, \$12,500, to be added to the fund of the Jackson Professorship of Clinical Medicine.

For the Shattuck Professorship of Pathological Anatomy, from

Frederick C. Shattuck . . . . .	\$12,500
George B. Shattuck . . . . .	1,000
	<u>\$13,500</u>

From an anonymous giver, securities valued at \$20,054.91, for the advancement of Astronomical Science.

For the Arnold Arboretum Fund, from

Miss Mary S. Ames . . . . .	\$100	Amount brought forward . . .	\$9,835
W. S. Bigelow . . . . .	1,000	Augustus Hemenway . . . . .	2,500
George N. Black . . . . .	500	James J. Higginson . . . . .	500
Stephen N. Bond . . . . .	25	John Homans, 2d . . . . .	50
Edward I. Browne (estate of) .	500	Henry S. Hunnewell . . . . .	1,000
Mr. and Mrs. H. B. Chapin .	200	Edward Jackson . . . . .	50
Caleb Chase . . . . .	100	Bernard Jenney . . . . .	100
Alexander Cochrane . . . . .	1,000	B. F. Keith . . . . .	120
Mrs. Walter H. Cowing . . . .	50	Harris Kennedy . . . . .	10
W. Murray Crane . . . . .	1,000	William Caleb Loring . . . . .	500
Mrs. George G. Crocker . . . .	200	Frederick E. Lowell . . . . .	10
C. P. Curtis . . . . .	1,000	Miss Ellen F. Mason . . . . .	1,000
H. P. Curtis . . . . .	10	S. A. Meagher . . . . .	25
Louis Curtis . . . . .	50	Charles Merriam . . . . .	1,000
C. H. Dalton . . . . .	1,000	Mrs. Charles Merriam . . . . .	1,000
J. S. Fay, Jr. . . . .	500	F. S. Moseley . . . . .	1,000
Mr. and Mrs. Francis B. Green	500	Mrs. William L. Parker . . . .	200
Edward S. Grew . . . . .	250	George F. Parkman . . . . .	1,000
Mrs. Edward S. Grew . . . . .	250	F. H. Peabody . . . . .	1,000
Mr. and Mrs. Henry S. Grew .	500	John C. Phillips . . . . .	1,000
Elisha Gunn . . . . .	100	Mr. and Mrs. George Putnam .	250
Charles Head . . . . .	1,000	Harry L. Rice . . . . .	100
Amount carried forward . . .	\$9,835	Amount carried forward . . .	\$22,250

Amount brought forward .	\$22,250	Amount brought forward .	\$31,310
Reginald C. Robbins . . . . .	250	Wm. S. and John T. Spaulding	3,000
Chester C. Rumrill . . . . .	100	Charles H. Taylor . . . . .	1,000
James A. Rumrill . . . . .	500	E. V. R. Thayer . . . . .	1,000
Winthrop Sargent . . . . .	1,000	Nathaniel Thayer . . . . .	5,000
Arthur P. Schmidt . . . . .	10	Grant Walker . . . . .	500
Frederick R. Sears . . . . .	1,000	Charles G. Weld . . . . .	2,500
Mr. and Mrs. J. M. Sears . . .	1,000	Mrs. Henry Whitman . . . . .	100
Francis Shaw . . . . .	100	Miss Adelia C. Williams . . . .	250
A. Shuman . . . . .	100	Moses Williams . . . . .	100
Francis Skinner . . . . .	5,000		
Amount carried forward .	\$31,310		\$44,760

From J. Arthur Beebe, \$1,000, for the School of Comparative Medicine.

*The total amount of these gifts for capital account is \$727,845.58, as is also stated on page 30 of this report.*

#### GIFTS FOR IMMEDIATE USE.

From the estate of Barthold Schlesinger, of Brookline, Mass., \$2,000, an unrestricted bequest.

From W. E. Byerly, \$172.12, towards the cost of publishing the *Annals of Mathematics* in 1900-01.

From an anonymous giver, \$800, an unrestricted gift.

From H. H. Hunnewell, \$12,000, "to be applied to extinguishing the debt incurred by the Department of Botany, by the purchase and equipment of a portion of the mineralogical section of the University Museum."

From an anonymous giver, \$4,382, towards the repayment of advances to the Botanic Department.

From an anonymous giver, \$1,000, for the Botanic Garden.

From James H. Hyde, \$10.63, for the French Department Library.

From Paul V. Bacon, \$50, for collections for a Germanic Museum.

For the Summer Camp at Squam Lake, from

Anonymous . . . . .	\$700
J. J. Higginson . . . . .	100
	<u>\$800</u>

## For the Gray Herbarium, from

R. L. Agassiz . . . . .	\$10	Amount brought forward . . .	\$2,160
Mrs. F. L. Ames . . . . .	10	Miss Amy Folsom . . . . .	10
Mr. and Mrs. J. B. Ames . . . . .	25	Mrs. William H. Forbes . . . . .	15
Miss Mary S. Ames . . . . .	10	Francis C. Foster . . . . .	10
Anonymous . . . . .	1,000	Mrs. Francis C. Foster . . . . .	10
Anonymous . . . . .	25	Miss C. A. French . . . . .	10
Anonymous . . . . .	500	C. W. Galloupe . . . . .	10
Howard P. Arnold . . . . .	25	Robert H. Gardiner . . . . .	10
Walter C. Baylies . . . . .	10	George A. Goddard . . . . .	10
Thomas P. Beal . . . . .	10	Francis C. Gray . . . . .	10
Joseph S. Bigelow . . . . .	10	Mrs. F. T. Gray . . . . .	10
W. S. Bigelow . . . . .	100	Reginald Gray . . . . .	10
William P. Blake . . . . .	10	Arnold Green . . . . .	10
Miss M. E. Blatchford . . . . .	10	Mrs. H. S. Grew . . . . .	10
Francis Boott . . . . .	5	George W. Hammond . . . . .	10
H. P. Bowditch . . . . .	10	Mrs. George W. Hammond . . . . .	10
James C. Braman . . . . .	5	Charles Head . . . . .	10
Mrs. John L. Bremer . . . . .	10	Mrs. Augustine Hemenway . . . . .	10
Miss Sarah F. Bremer . . . . .	10	Miss Clara Hemenway . . . . .	10
William Brewster . . . . .	10	Miss A. P. Henchman . . . . .	10
Addison Brown . . . . .	10	J. P. B. Henshaw . . . . .	10
Samuel N. Brown . . . . .	10	T. W. Higginson . . . . .	5
Stephen Bullard . . . . .	10	Henry Hornblower . . . . .	10
Mrs. William S. Bullard . . . . .	10	Miss Katharine Horsford . . . . .	25
Mrs. Elizabeth A. Burrage . . . . .	10	Clement S. Houghton . . . . .	10
Samuel Cabot . . . . .	20	Henry S. Howe . . . . .	10
Charles F. Choate . . . . .	10	Mrs. John E. Hudson . . . . .	10
Miss Cora H. Clarke . . . . .	10	Arthur Hunnewell . . . . .	100
James M. Codman . . . . .	10	H. S. Hunnewell . . . . .	10
Miss Helen Collamore . . . . .	10	James F. Hunnewell . . . . .	10
Mrs. C. A. Cummings . . . . .	10	Walter Hunnewell . . . . .	10
Charles P. Curtis . . . . .	10	Mrs. P. T. Jackson . . . . .	5
Mrs. Charles P. Curtis . . . . .	10	William A. Jeffries . . . . .	10
Henry P. Curtis . . . . .	20	Charles W. Jenks . . . . .	10
Louis Curtis . . . . .	10	Edward C. Johnson . . . . .	10
C. H. Dalton . . . . .	10	B. F. Keith . . . . .	10
Samuel B. Dana . . . . .	10	David P. Kimball . . . . .	10
Walter Deane . . . . .	25	Mrs. David P. Kimball . . . . .	10
Lewis S. Dixon . . . . .	5	Henry H. Kimball . . . . .	10
Edward S. Dodge . . . . .	10	Lemuel C. Kimball, Jr. . . . .	10
George B. Dorr . . . . .	10	George C. Lee . . . . .	10
Mrs. J. W. Elliot . . . . .	10	George V. Leverett . . . . .	20
William Endicott, Jr. . . . .	50	Mrs. George Linder . . . . .	10
Charles F. Fairbanks . . . . .	10	Mrs. Mary E. Lodge . . . . .	10
E. M. Farnsworth . . . . .	10	Augustus P. Loring . . . . .	15
J. S. Fay, Jr. . . . .	25	Miss Katharine P. Loring . . . . .	15
S. W. Fletcher . . . . .	10	Miss Louisa P. Loring . . . . .	10
Amount carried forward . . .	\$2,160	Amount carried forward . . .	\$2,740

Amount brought forward . . .	\$2,740	Amount brought forward . . .	\$4,065
William Caleb Loring . . . . .	10	David N. Skillings . . . . .	10
Mrs. William Caleb Loring . . . . .	10	Francis Skinner . . . . .	20
Mrs. T. K. Lothrop . . . . .	10	F. P. Sprague . . . . .	10
Arthur T. Lyman . . . . .	10	Mrs. Isaac Sprague . . . . .	5
Miss Ellen F. Mason . . . . .	10	Miss S. F. Storer . . . . .	20
Miss Susan Minns . . . . .	25	John E. Thayer . . . . .	100
Mrs. Samuel Torrey Morse . . . . .	10	George H. Tilton . . . . .	10
Grenville H. Norcross . . . . .	10	B. F. U. . . . .	10
Mrs. Otis Norcross . . . . .	10	B. Vaughan . . . . .	10
Peder Olsen . . . . .	10	Miss Caroline E. Ward . . . . .	10
Miss Emily L. Osgood . . . . .	10	Miss Cornelia Warren . . . . .	10
Mrs. Henrietta Page . . . . .	5	B. M. Watson . . . . .	10
Charles W. Parker . . . . .	10	Mrs. F. G. Webster . . . . .	25
F. H. Peabody . . . . .	1,000	Mrs. Charles W. Welch . . . . .	10
Miss Mary R. Peabody . . . . .	10	C. Wesselhoeft . . . . .	5
C. L. Peirson . . . . .	25	Mrs. Charles T. White . . . . .	10
Edward C. Perkins . . . . .	10	George R. White . . . . .	500
Mrs. Dudley L. Pickman . . . . .	10	S. B. Whiting . . . . .	10
David Pingree . . . . .	10	Miss Adelia C. Williams . . . . .	10
Otis L. Prescott . . . . .	10	E. F. Williams . . . . .	100
Miss Sarah E. Read . . . . .	10	John D. Williams . . . . .	10
Mrs. William Howell Reed . . . . .	10	Miss L. H. Williams . . . . .	10
George E. Richards . . . . .	10	Moses Williams . . . . .	100
Mrs. M. D. Ross . . . . .	10	Ralph B. Williams . . . . .	100
Mrs. Waldo O. Ross . . . . .	10	Mrs. Roger Wolcott . . . . .	10
George O. Sears . . . . .	10	Edward S. Wood . . . . .	10
Mrs. Knyvet W. Sears . . . . .	20	Mrs. Charlotte F. Woodman . . . . .	10
Francis Shaw . . . . .	10	Miss Mary Woodman . . . . .	10
Mrs. G. H. Shaw . . . . .	20	John G. Wright . . . . .	10
Amount carried forward . . .	\$4,065		\$5,230

From E. S. Sheldon, \$75, for binding books in the Lowell Memorial Library.

From James Byrne, \$1,050, the amount of scholarships received by him while in College.

Through John F. Moors, Treasurer, \$800, to be expended under the direction of Professor Hanus for the library of the Department of Education.

From James J. Storrow, \$3,000, for the Laboratory of Metallurgical Chemistry.

From an anonymous giver, \$400, to be expended under the direction of Professor Sabine for physical apparatus.

For lantern slides for the Department of The Classics, from

Anonymous . . . . .	\$3.44
W. Amory Gardner . . . . .	75.00
Gardiner M. Lane . . . . .	75.00
	<u>\$153.44</u>

## For the South End House Fellowship, from

Charles B. Barnes, Jr. . . . .	\$50
William A. Dupee . . . . .	100
George S. Fiske . . . . .	50
Edward W. Grew . . . . .	25
Edward J. Holmes . . . . .	100
	<hr/>
	\$325

From James Loeb, \$300, his final payment on account of the Charles Eliot Norton Fellowship for 1901-02.

From Mrs. C. M. Barnard, \$600, her nineteenth yearly gift for the Warren H. Cudworth Scholarships.

From an anonymous giver, \$350, for the Ricardo Prize Scholarship for 1902-03.

From an anonymous giver, \$100, to be used in the same way as the income of scholarship funds is used.

From Archibald Cary Coolidge, \$800, for the purchase of books for the College Library.

From the Dante Society, \$150, for the purchase of books.

From Alain C. White, \$250, for the purchase of Dante books for the College Library.

From Harold J. Coolidge, \$50, his second annual gift for the purchase of books on the Chinese question, for the College Library.

For the purchase of English literature of the seventeenth and eighteenth centuries for the College Library, from

Winthrop Ames . . . . .	\$30	Amount brought forward . .	\$471
George G. Amory . . . . .	25	Augustin H. Parker . . . . .	10
Mr. and Mrs. Eugene Battelle . .	75	William Phillips . . . . .	100
Boylston A. Beal . . . . .	5	Mrs. F. L. W. Richardson . .	100
C. N. Bliss, Jr. . . . .	20	W. B. Rogers . . . . .	50
Eliot C. Clarke . . . . .	10	C. C. Rumrill . . . . .	25
W. Endicott Dexter . . . . .	5	Mrs. Charles F. Sprague . . .	150
Charles D. Dickey . . . . .	50	R. H. Stevenson, Jr. . . . .	10
Allan Forbes . . . . .	10	F. G. Thomson . . . . .	50
H. S. Howe . . . . .	20	C. C. Walker . . . . .	25
Henry T. Kidder . . . . .	200	Beekman Winthrop . . . . .	25
Philip D. Mason . . . . .	1		<hr/>
John Torrey Morse, 3d . . . . .	10	Interest on deposit . . . . .	3.50
Honoré Palmer . . . . .	10		<hr/>
Amount carried forward . . .	\$471		\$1,019.50

Through John A. Gade, from graduates of the Department of Architecture, \$125, for the purchase of a Corinthian capital in Italy.

From Mrs. Emil C. Hammer, in memory of her husband, formerly Danish Consul at Boston, her third annual gift of \$500, to be used for the purchase of Scandinavian books, and for a concert of Danish music.

From an anonymous giver, \$20, for the purchase of books on Aeronautics.

For the purchase of a collection of portraits of David Garrick for the Library, as a memorial to the late Justin Winsor, additional, from

George P. Baker . . . . .	\$9
Stanton Elliot . . . . .	10
	<u>\$19</u>

From John Harvey Treat, \$300, for the purchase of books on the Catacombs and Christian Antiquities of Italy.

From the Society for Promoting Theological Education, \$7,987.71, for the Library of the Divinity School.

For the Peabody Museum of American Archaeology and Ethnology, from

Anonymous . . . . .	\$100
Mrs. N. E. Baylies . . . . .	25
Clarence B. Moore . . . . .	500
Miss Mary L. Ware . . . . .	500
	<u>\$1,125</u>

From an anonymous giver, \$25, for the Medical School.

From James J. Putnam and Moorfield Storey, trustees, \$500, towards a salary in the Medical School.

From an anonymous giver, \$500, for services in connection with the investigation of cancer.

From an anonymous giver, \$250, to be added to the income of the Caroline Brewer Croft Fund for 1901-02.

From Theobald Smith, \$25, to be used for research in the Laboratory of Comparative Pathology.

From the Rockefeller Institute, \$100, for research work under the direction of Professor Theobald Smith.

From an anonymous giver, \$500, for the laboratory of the Pathological Department.

From Henry F. Sears, \$1,000, to be added to his previous gifts for the Pathological Department Library.

## For the Surgical Laboratory, from

C. W. Amory . . . . .	\$200
W. S. Bigelow . . . . .	200
Mrs. Arthur Blake . . . . .	500
Francis Stanton Blake . . . . .	200
George Baty Blake . . . . .	200
Henry C. Pierce . . . . .	200
	<hr/>
	\$1,500

For the "new Medical School Land, Buildings, Equipment, and Endowments" (in addition to gifts for endowments, amounting to \$459,758.17, which are separately entered in this year's Statement among "Gifts to form new Funds or to increase old ones"), from

Miss Mary S. Ames . . . . .	\$5,000	Amount brought forward .	\$114,049.79
Oliver Ames . . . . .	5,000	Walter Hunnewell . . . . .	2,000
Anonymous . . . . .	100	C. C. Jackson . . . . .	1,000
Anonymous . . . . .	10,000	Eben D. Jordan . . . . .	5,000
C. F. Ayer . . . . .	50	Harris Kennedy . . . . .	100
Frederick Ayer . . . . .	500	L. C. Kimball, Jr. . . . .	50
Robert Bacon . . . . .	25,000	Gardiner M. Lane . . . . .	1,000
Francis Bartlett . . . . .	10,000	Amory A. Lawrence . . . . .	1,000
Franklin H. Beebe . . . . .	1,000	Arthur T. Lyman . . . . .	5,000
Mrs. John L. Bremer . . . . .	5,000	Mr. and Mrs. Charles Merriam	2,000
Miss Sarah Bremer . . . . .	5,000	G. H. Monks . . . . .	1,000
Peter C. Brooks . . . . .	1,000	Mrs. Leopold Morse . . . . .	100
Shepherd Brooks . . . . .	1,000	Parkinson & Burr . . . . .	1,000
I. T. Burr . . . . .	1,000	F. H. Peabody . . . . .	1,000
Walter C. Cabot . . . . .	5,000	Sumner B. Pearmain . . . . .	100
Mrs. Charles P. Cheney . . . . .	250	W. L. Richardson . . . . .	25,000
Mrs. E. S. Cheney . . . . .	1,000	Stephen Salisbury . . . . .	1,000
W. Murray Crane . . . . .	5,000	Mrs. Knyvet W. Sears . . . . .	200
Mrs. William H. Forbes . . . . .	5,000	Mrs. G. H. Shaw . . . . .	1,000
Mrs. A. P. Gardner . . . . .	100	Miss Mabel Simpkins . . . . .	200
Frederick Guild, Jr. . . . .	50	Francis Skinner . . . . .	5,000
Charles Head . . . . .	1,000	W. D. Sohler . . . . .	1,000
Augustus Hemenway . . . . .	12,299.79	John T. Spaulding . . . . .	10,000
John Hogg . . . . .	1,000	W. S. Spaulding . . . . .	10,000
A. L. Hollingsworth . . . . .	200	Moorfield Storey . . . . .	500
H. S. Howe . . . . .	1,000	Mrs. Charles Van Brunt . . . . .	100
H. H. Hunnewell . . . . .	12,500	James C. White . . . . .	625
			<hr/>
Amount carried forward	\$114,049.79		\$189,024.79

From Waldo E. Boardman, \$50, to be added to the Dental School Building gifts.

From an anonymous giver, \$18, towards the salary of an Assistant in the Observatory.

From Mrs. Henry Draper, of New York, an additional sum of \$9,999.96, to be expended by the Director of the Observatory in prosecuting the researches in the photography of stellar spectra, with which the late Dr. Henry Draper's name is honorably associated.

From W. S. Bigelow, \$300, towards the cost of publishing certain lunar photographs.

From an anonymous giver, \$20,000, to be used as Professor E. C. Pickering may suggest.

From the Massachusetts Society for Promoting Agriculture, its fifth annual payment of \$2,500, "to be expended at the Arnold Arboretum by the Director, to increase the knowledge of Trees."

From Morris K. Jesup, \$2,800, for cases for the collection of North American woods, which was given by him to the Arnold Arboretum.

From Mr. and Mrs. Nelson Robinson, \$15,000 additional, for Nelson Robinson Jr. Hall.

From Westinghouse, Church, Kerr & Co. and The Westinghouse Machine Co., \$1,335, towards the cost of two engines for Pierce Hall.

From Jacob H. Schiff, \$6,000 additional, for the erection of a building to house the Semitic collection, and for its furnishing.

From the family of John Simpkins, \$5,000 additional, for fitting up a room for instruction in Mining and Engineering, and \$6,600 for an additional room in the Rotch Building for the John Simpkins Laboratories.

From the Committee on the Regulation of Athletic Sports, \$41,610 in cash, and securities valued at \$16,309.72, for improvements upon, and additions to, The Soldier's Field, to be made by said Committee, with the approval of the Corporation.

From Learned Hand, \$1,000, towards the cost of a building and its appliances and accessories, for the Department of Philosophy.

*The total amount of these gifts for immediate use is \$367,891.87, as is also stated on page 28 of this report.*

CHARLES F. ADAMS, 2D, *Treasurer.*

BOSTON, October 16, 1902.



# ACCOUNTS.

*General Statement of Receipts and Disbursements  
for the year ending*

INCOME.

Interest on notes, mortgages, advances, &c., . . . . .		\$66,026.56	
Interest on Policies Mass. Hospital Life Insurance Co., . . . . .			849.00
Interest on Bank Deposits.			
Deposit in City Trust Co., . . . . .		\$25.44	
"    New England Trust Co., . . . . .		61.48	
"    National Union Bank, . . . . .		5,212.08	
"    Old Boston National Bank, . . . . .		1,191.92	
"    Suffolk National Bank, . . . . .		50.40	
		<hr/>	6,541.27
Interest on Public Funds (after deducting \$2,876.67 for sinking premiums).			
United States 4's, . . . . .		\$13,293.51	
Massachusetts 3½'s of 1918, . . . . .		1,185.25	
"    "    "    1916, . . . . .		154.15	
"    "    "    1938, . . . . .		47.92	
City of Boston 3½'s, . . . . .		350.00	
		<hr/>	15,080.83
Interest on Sundry Bonds (after deducting \$2,953.24 for sinking premiums).			
Adams Express Co. 4's, . . . . .		\$160.00	
American Bell Telephone Co. 4's, . . . . .		10,162.71	
"    Tel and Tel. Co. 4's, . . . . .		8,000.00	
Walter Baker & Co. Ltd. 4½'s, . . . . .		8,280.00	
Broadway Realty Co. 5's, . . . . .		10,082.08	
Brookline Gas Light Co. 5's, . . . . .		250.00	
Buffalo City Gas Co. 5's, . . . . .		50.00	
Chicago Edison Co. 5's, . . . . .		4,709.60	
Chicago Junc. Railways & Union Stock Yards Co. 5's, . . . . .		14,979.85	
"    "    "    "    4's, . . . . .		4,000.00	
The Electric Corporation 7's, . . . . .		70.00	
Girard Point Storage Co. 3½'s, . . . . .		691.53	
Metropolitan Tel. & Tel. Co. 5's, . . . . .		7,500.00	
Montreal Light, Heat and Power Co. 4½'s, . . . . .		1,270.83	
New England Tel. and Tel. Co. 6's, . . . . .		7,128.90	
"    "    "    5's, . . . . .		4,058.82	
St. Louis National Stock Yards Co. 4's, . . . . .		2,300.00	
		<hr/>	83,694.26
Interest on Railroad Bonds (after deducting \$8,203.76 for sinking premiums).			
Baltimore & Ohio 4's, . . . . .		\$4,000.00	
"    "    (P. L. E. & W. V. system) Ref. 4's, . . . . .		900.00	
"    "    conv. 4's, . . . . .		2,772.20	
"    "    So. Western 3½'s, . . . . .		3,500.00	
Bangor & Aroostook 5's (Van Buren extension), . . . . .		5,826.38	
"    "    Ref. 4's, . . . . .		361.11	
Burlington & Mo. River in Neb. 6's, . . . . .		17,939.95	
Central Vermont 4's, . . . . .		1,740.00	
		<hr/>	
Amounts carried forward, . . . . .		\$37,039.64	\$172,141.92

*of the Treasurer of Harvard College,  
July 31, 1902.*

## EXPENSES.

Paid to account of expenses in the

**University, as per Table I (page 56).**

Salaries, . . . . .	\$41,400.83	
Retiring Allowances, . . . . .	14,147.00	
Sundry payments made from special Funds, . . . . .	5,581.28	
Other expenses, . . . . .	49,191.90	
Deficit in the School of Veterinary Medicine for 1901-02, . . . . .	1,847.66	
Part of the debt of the School of Veterinary Medicine, . . . . .	10,291.11	\$122,409.78

**College, as per Table II (page 60).**

Salaries for instruction, . . . . .	\$375,525.84	
Sundry salaries, . . . . .	14,100.00	
Repairs, insurance, and cleaning on College Buildings, not valued in Treasurer's books, . . . . .	51,880.11	
General expenses, . . . . .	67,749.79	
Fellowships, . . . . .	20,966.66	
Scholarships, . . . . .	45,025.08	
Exhibitions and expenses therefor, . . . . .	23,313.87	
Prizes and dies, . . . . .	2,185.24	
Botanic Garden and Botanic Museum, . . . . .	10,368.54	
Gray Herbarium, . . . . .	7,982.85	
Hemenway Gymnasium, . . . . .	8,941.04	
Jefferson Physical Laboratory, . . . . .	3,535.68	
Appleton Chapel, . . . . .	9,198.61	
Summer Schools, . . . . .	17,223.96	
Books, from special Funds and gifts, . . . . .	3,408.86	
Apparatus and expenses for research, from special Funds and gifts, . . . . .	5,808.08	
Publication expenses, from special Funds and gifts, . . . . .	4,363.10	
Sundry payments from special Funds and gifts, . . . . .	16,231.47	
Appropriations for collections and laboratories, . . . . .	36,488.47	723,796.70

**Library, as per Table III (page 75).**

Salaries, . . . . .	\$15,700.00	
Services and wages, . . . . .	18,156.72	
Books, . . . . .	23,537.62	
Other expenses, . . . . .	10,519.82	67,914.16

**Divinity School, as per Table IV (page 78).**

Salaries for instruction, . . . . .	\$23,666.67	
Scholarships and Exhibitions, . . . . .	2,197.69	
Library building alterations, . . . . .	2,900.00	
Other expenses, . . . . .	10,394.94	39,159.30

Amount carried forward, . . . . . \$953,279.89

*General Statement of Receipts and Disbursements  
for the year ending*

INCOME (continued).

Amounts brought forward, . . . . .	\$37,039.64	\$172,141.92
<b>Interest on Railroad Bonds (continued)</b>		
Chicago, Burlington & Quincy 4's, . . . . .	120.00	
"    "    "    3½'s, . . . . .	18,209.22	
Chicago & No. W., Madison Extension 7's, . . . . .	5,310.09	
Chicago, Rock Island & Pacific 4's, . . . . .	3,920.90	
Chicago Terminal Transfer 4's, . . . . .	4,000.00	
Eastern 6's, . . . . .	12,701.36	
Eastern sterling 6's, . . . . .	5,734.47	
Fort Scott, So. E. & Memphis 7's, . . . . .	4,550.00	
Indiana, Illinois & Iowa 4's, . . . . .	4,000.00	
Kansas City, Fort Scott & Memphis 6's, . . . . .	2,178.98	
Kansas & Missouri 5's, . . . . .	2,700.00	
Long Island 4's, . . . . .	12,000.00	
Massachusetts Electric Co's. 4½'s, . . . . .	4,500.00	
Metropolitan West Side Elevated 4's, . . . . .	9,855.56	
Minneapolis Union 5's, . . . . .	4,866.83	
New York Central & Hudson River 3½'s (L.S. & M.S. Coll.), . . . . .	6,974.85	
New York Central & H. R. 3½'s (M. C. Coll.), . . . . .	1,190.00	
New York, Ontario & Western 4's, . . . . .	7,884.13	
Northern Pacific—Great Northern Joint 4's, . . . . .	17,640.00	
Oregon Short Line 5's, . . . . .	2,230.25	
Pennsylvania Co. 3½'s, . . . . .	1,750.00	
Rutland 6's, . . . . .	569.33	
Rutland Car Trust 4½'s, . . . . .	291.23	
St. Louis & San Francisco Ref. 4's, . . . . .	1,875.00	
Second Avenue 5's, . . . . .	4,605.26	
Third Avenue 4's, . . . . .	3,959.80	
Union Pacific 4's, . . . . .	18,000.00	198,656.90
<b>Dividends on Sundry Stocks.</b>		
Adams Express Co., . . . . .	\$160.00	
American Light & Traction Co., preferred, . . . . .	48.00	
American Surety Co., . . . . .	249.00	
Calumet & Hecla Mining Co., . . . . .	75.00	
General Electric Co., . . . . .	48.00	
Illinois & Miss. Telegraph Co., . . . . .	37.50	
New York Security & Trust Co., . . . . .	230.00	
The Pullman Co., . . . . .	198.00	
Western Union Telegraph Co., . . . . .	187.50	1,233.00
<b>Dividends on Manufacturing Stocks.</b>		
Amoskeag Manufacturing Co., . . . . .	\$1,200.00	
Merrimack " " . . . . .	561.00	
Pacific Mills, . . . . .	2,400.00	4,161.00
Amount carried forward, . . . . .	\$376,192.83	

of the Treasurer of Harvard College,  
July 31, 1902.

EXPENSES (*continued*).

Amount brought forward, . . . . .		\$953,279.89
<b>Law School, as per Table V (page 80).</b>		
Salaries for instruction, . . . . .	\$46,983.33	
Scholarships, . . . . .	4,550.00	
Other expenses, . . . . .	<u>28,215.94</u>	79,749.27
<b>Medical School, as per Table VI (page 82).</b>		
Salaries for instruction, . . . . .	\$101,741.66	
Fees repaid to Instructors, . . . . .	4,975.00	
Fellowships, . . . . .	2,765.00	
Scholarships and Exhibitions, . . . . .	4,687.98	
Prizes and expenses, . . . . .	156.25	
Warren Anatomical Museum, . . . . .	669.55	
Books, from special Funds and gifts, . . . . .	1,171.82	
Sundry payments made from special Funds and gifts, . . . . .	4,441.20	
Laboratory appropriations, . . . . .	12,512.44	
Other expenses, . . . . .	<u>30,953.46</u>	164,074.86
<b>Medical School Undertaking, as per Table VI (page 85).</b>		
Real estate, Longwood and Huntington Ave- nues and Francis Street, Boston, . . . . .	\$622,774.98	
Real estate, Huntington Avenue, Boston, . . . . .	89,433.49	
Other expenses, . . . . .	<u>892.89</u>	
	\$663,101.36	
Less amount transferred to Medical School, . . . . .	<u>888.99</u>	662,712.37
<b>Dental School, as per Table VII (page 87).</b>		
Salaries for instruction, . . . . .	\$12,780.00	
Other expenses, . . . . .	<u>18,118.23</u>	25,898.23
<b>Museum of Comparative Zoölogy, as per Table VIII (page 88).</b>		
Paid from sundry Funds on the order of the Faculty, . . . . .	\$27,718.70	
Sturgis Hooper Fund, salary and expenses, . . . . .	5,066.27	
Scholarship, . . . . .	<u>838.34</u>	33,118.31
<b>Peabody Museum of American Archae- ology and Ethnology, as per Table IX (page 89).</b>		
Peabody Professor Fund, Peabody Pro- fessor, . . . . .	\$2,360.29	
Fellowships and Scholarship, . . . . .	1,775.05	
Other expenses, . . . . .	<u>5,735.49</u>	9,870.83
Amount carried forward, . . . . .		\$1,928,698.26

*General Statement of Receipts and Disbursements  
for the year ending*

INCOME (continued).

Amount brought forward, . . . . .		<b>\$376,192.82</b>
<b>Dividends on Railroad Stocks.</b>		
Boston & Lowell, . . . . .	\$2,880.00	
Boston & Maine, . . . . .	2,219.00	
Fitchburg, preferred, . . . . .	1,185.00	
Illinois Central, . . . . .	120.00	
Manhattan, . . . . .	51.00	
Massachusetts Electric Co's., preferred, . . . . .	2,500.00	
New York Central & Hudson River, . . . . .	9,892.50	
Northern (N. H.), . . . . .	1,740.00	
Northern Pacific, preferred, . . . . .	45.00	
Old Colony, . . . . .	2,485.00	
Pennsylvania, . . . . .	11,104.50	
West End Street, preferred, . . . . .	208.00	
West Virginia Central & Pittsburg, . . . . .	40.00	
	34,470.00	
<b>Dividends on Real Estate Trust Stocks.</b>		
Boston Real Estate Trust, . . . . .	\$675.00	
Essex Street Trust, . . . . .	3,000.00	
Paddock Building Trust, . . . . .	3,586.78	
	7,211.78	
<b>Real Estate Investments, from rents, &amp;c., net receipts.</b>		
<b>Cambridge (University Houses and Lands).</b>		
Gross receipts, . . . . .	\$44,613.60	
Less Taxes, . . . . .	\$4,153.23	
Insurance, . . . . .	864.71	
Repairs, improvements, care, &c., . . . . .	15,433.48	20,451.42
		<b>\$24,162.18</b>
<b>Boston (general investments).</b>		
Gross receipts, . . . . .	\$205,829.69	
Less Taxes, . . . . .	\$42,543.71	
Insurance, . . . . .	2,433.07	
Repairs, improvements, care, &c., . . . . .	3,326.22	
Repaid to capital, . . . . .	2,000.00	50,303.00
		<b>155,526.69</b>
<b>Bussey real estate.</b>		
Gross receipts, . . . . .	\$42,594.47	
Less Taxes, . . . . .	\$9,421.27	
Insurance, . . . . .	348.75	
Interest, . . . . .	893.56	
Repairs, improvements, care, &c., . . . . .	1,558.76	
Heat and power, . . . . .	6,695.10	18,917.44
		<b>23,677.03</b>
Amounts carried forward, . . . . .		<b>\$417,874.60</b>

of the Treasurer of Harvard College,  
July 31, 1902.

**EXPENSES** (*continued*).

Amount brought forward, . . . . .		\$1,928,698.26	
<b>Observatory, as per Table X (page 90).</b>			
Salaries, . . . . .	\$18,900.00		
Addition to fireproof building, . . . . .	3,278.37		
Other expenses, . . . . .	<u>40,588.61</u>	57,766.98	
<b>Bussey Institution, as per table XI (page 91).</b>			
Salaries for instruction, . . . . .	\$7,450.00		
New greenhouses (part), . . . . .	7,857.27		
Other expenses, . . . . .	<u>9,668.12</u>	24,475.39	
<b>Arnold Arboretum, as per Table XII (page 92).</b>			
Salaries, . . . . .	\$3,500.00		
Cases for Jessup collection of North American woods, . . . . .	2,800.00		
Other expenses, . . . . .	<u>16,816.28</u>	23,116.28	
<b>School of Veterinary Medicine, as per Table XIII (page 93).</b>			
Sundry expenses, . . . . .	\$2,167.40		
Less deficit for 1901-02 assumed by the University, . . . . .	<u>1,847.66</u>	319.74	
<b>Annuities from the following Funds.</b>			
<b>Charles Wilder, . . . . .</b>	<b>\$1,279.10</b>		
Advancement of Astronomical Science (1901), . . . . .	2,088.55		
"    "    "    "    (1902), . . . . .	150.00		
Anonymous, . . . . .	100.00		
<b>Bussey Trust, . . . . .</b>	<b>4,000.00</b>		
<b>Caroline Brewer Croft, . . . . .</b>	<b>2,162.58</b>		
<b>Gurney, . . . . .</b>	<b>1,000.00</b>		
Professorship of Hygiene, . . . . .	2,000.00		
<b>Alexander W. Thayer, . . . . .</b>	<b>480.00</b>	18,260.23	
<b>Class Funds.</b>			
Paid the Secretary of the <b>Class of 1853, . . . . .</b>		149.00	
<b>Sundry payments from income.</b>			
Gifts for Cuban Teachers, expenses, . . . . .	\$2,120.22		
"    the purchase of land in New Hampshire, . . . . .	2,799.06		
<b>John W. &amp; Belinda L. Randall Fund, . . . . .</b>	<b>200.00</b>		
<b>Daniel Williams Fund, for the benefit of the Masphee Indians, . . . . .</b>	<b>512.24</b>		
<b>Sarah Winslow Fund, to the Minister and Teacher at Tyngsborough, Mass., . . . . .</b>	<b>219.18</b>		
<b>Woodland Hill Fund, taxes and legal expenses on account of Muddy River land, . . . . .</b>	<b>964.31</b>		
<b>Calvin and Lucy Ellis Fund, taxes and plans, . . . . .</b>	<b>91.68</b>		
<b>Calvin and Lucy Ellis Aid Fund, taxes, . . . . .</b>	<b>506.60</b>		
<b>Gift for the Harvard Union, . . . . .</b>	<b>10,265.39</b>		
<b>Charles L. Hancock Fund, taxes on Chelsea real estate, . . . . .</b>	<b>38.27</b>	17,716.95	
Amount carried forward, . . . . .		\$2,065,502.78	

*General Statement of Receipts and Disbursements  
for the year ending*

INCOME (continued).

Amounts brought forward, . . . .	\$208,865.90	\$417,874.80		
<b>Real Estate Investments (continued).</b>				
<b>Sundry estates (special investments).</b>				
Gross receipts, . . . . .	\$6,801.22			
Less Taxes, . . . . .	\$1,884.14			
Repairs, . . . . .	608.35			
Insurance, . . . . .	70.00			
Advances repaid, . . . . .	62.28			
Interest, . . . . .	6.28	2,681.00	4,170.22	207,536.12
<b>Receipts from Students.</b>				
<b>Tuition fees, regular courses.</b>				
College, . . . . .	\$409,550.00			
Divinity School, . . . . .	4,737.50			
Law School, . . . . .	92,017.50			
Medical School, . . . . .	92,883.67			
Dental " . . . . .	11,590.00			
Bussey Institution, . . . . .	3,255.00	\$618,983.67		
<b>Tuition fees, Summer courses.</b>				
College, . . . . .	\$18,537.38			
Divinity School, . . . . .	1,170.00			
Medical " . . . . .	4,570.00	24,277.33		
<b>Laboratory fees.</b>				
College, . . . . .	\$23,745.97			
Medical School, . . . . .	3,226.02			
Dental " . . . . .	1,775.28	28,747.27		
<b>Examination fees.</b>				
College. Admission, . . . . .	\$5,475.00			
Condition, . . . . .	483.00			
Degree of S.D., . . . . .	30.00			
Medical School. Condition, . . . . .	321.00			
Dental " " . . . . .	99.00	6,408.00		
<b>Graduation fees.</b>				
College, . . . . .	\$5,020.00			
Medical School, . . . . .	4,020.00	9,040.00		
<b>Matriculation fees, Medical School, . . . . .</b>				
		885.00		
<b>Rooms in dormitories.</b>				
College buildings, . . . . .	\$96,221.34			
Less receipts from students separately entered in Uni- versity Houses and Lands account, . . . . .	21,839.86	\$74,381.48		
Divinity School buildings, . . . . .	2,970.00	77,351.48		
Amounts carried forward, . . . . .	\$760,142.75	\$625,410.72		



of the Treasurer of Harvard College,  
July 31, 1902.

EXPENSES (continued).

Amount brought forward, . . . . . \$2,065,502.78

Construction Funds.

Brighton Marsh Fence, . . . . .	\$100.00	
Pierce Hall, . . . . .	118,644.80	
Nelson Robinson Jr. Hall, . . . . .	87,451.85	
Semitic Building, . . . . .	34,888.08	
John Simpkins Hall, . . . . .	3,648.30	
Stillman Infirmary, . . . . .	34,122.86	
University Museum, . . . . .	40,205.61	309,006.40

Total amount of expenses, . . . . . \$2,374,509.18

INVESTMENTS AND SUNDRY PAYMENTS.

GENERAL INVESTMENTS.

\$100,000 Baltimore & Ohio R. R. Conv. Deb. 4's of 1911 (30%), . . . . .	\$30,000.00	
100,000 Baltimore & Ohio R. R. (Pittsburg, Lake Erie & West Virginia System) Ref. 4's of 1941, . .	99,350.00	
125,000 Bangor & Aroostook R. R. Cons. Ref. M. 4's of 1951, . . . . .	118,750.00	
2,000 Chicago, Burl. & Quincy R. R. 3½'s of 1949, .	1,990.00	
100,000 Kansas City, Fort Scott & Memphis Cons. M. 6's of 1928, . . . . .	124,940.00	
100,000 Metropolitan West Side Elevated Extension M. 4's of 1938, . . . . .	97,000.00	
100,000 Montreal Light, Heat and Power Co. 1st M. Coll. Tr. 4½'s of 1932, . . . . .	101,000.00	
100,000 Municipal Gas and Electric Co. of Rochester, N. Y., 1st M. 4½'s of 1942, . . . . .	100,000.00	
343,800 Northern Pacific—Great Northern Joint 4% Bonds and Scrip (C. B. & Q. Collateral) of 1921, received in exchange for 1718 shares Chicago, Burlington & Quincy R. R. at their book valuation, . . . . .	164,910.92	
100,000 Oregon Short Line R. R. Cons. 1st M. 5's of 1946, . . . . .	118,555.00	
100,000 Pennsylvania Company 3½'s of 1916, . . . .	97,875.00	
46,500 Pennsylvania R. R. Conv. 3½'s of 1912 (50%), subscription at par, . . . . .	23,250.00	
100,000 Rutland R. R. Car Trust 4½'s of 1905, . . . .	100,810.00	
100,000 St. Louis & San Fran. R.R. Ref. M. 4's of 1951,	97,125.00	
100,000 St. Louis National Stock Yards Co. 4's of 1930, 53 rights Pennsylvania R. R., . . . . .	23.00	
1,000 shares " " . . . . .	74,937.50	
1,089 " Paddock Building Trust (35%), . . . . .	88,115.00	
Amounts carried forward, . . . . .	\$1,488,081.42	\$2,374,509.18

*General Statement of Receipts and Disbursements  
for the year ending*

INCOME (*continued*).

Amounts brought forward, . . . . \$760,142.75 \$625,410.72

Receipts from Students (*continued*).

Library fines.

College, . . . . .	\$302.90	
Divinity School, . . . . .	2.85	
Dental " . . . . .	.74	306.49

Use of lockers, Hemenway Gymnasium, . . . . 3,550.00

" microscopes, Medical School, . . . . . 1,417.00

Summer Camp, engineering, . . . . . 5,665.50

" School excursions, . . . . . 5.00 771,086.74

Sundries.

**William Pennoyer Annuity, . . . . . \$128.00**

**Asa Gray's copyrights, . . . . . 1,018.61**

**Matthews Scholarships (½ net rents of Hall), . 5,156.87**

Trustees of **Edward Hopkins, . . . . . 186.47**

Trustee of **C. L. Hancock real estate, . . . . 1,067.74**

Sale of grass, wood, old material, &c., . . . . 6,045.54

" old examination papers, . . . . . 400.88

" tickets to Commencement Dinner, . . . . 718.00

" tickets to Divinity School Alumni Dinner, . 57.00

" books, pamphlets, catalogues, &c., . . . . 4,104.61

Board of horses, cattle, &c., at **Bussey Institution, 6,495.45**

Use of illustrations in **Asa Gray's books, . . . 200.00**

" Library by resident graduates and others, . 85.00

" Gymnasium by graduates and others, . . . 109.51

" Buildings (not Univ. Houses and Lands), . 5,360.00

Fees in Infirmary, Dental School, . . . . . 3,835.45

" from Veterinary Hospital and Forge, . . . . 243.24

Taxes on **Harvard Union repaid, . . . . . 3,380.00**

Insurance premiums on Memorial Hall repaid, . . 990.81

Damage to grass land, Bussey Institution, . . . . 187.66

Pasturage at Summer Camp, . . . . . 30.00 39,795.29

Sundry Gifts for immediate use (see page 18), . . . . . 367,891.87

Total amount of income, . . . . . \$1,804,184.62

RECEIPTS EXCLUSIVE OF INCOME.

GIFTS FOR CAPITAL ACCOUNT.

**Arnold Arboretum Fund (additional), . . . . . \$44,760.00**

**Bowdoin Prize Fund for Dissertations (additional), . 15,000.00**

Class Subscription Fund (additional), . . . . . 147.50

**T. Jefferson Coolidge Fund for Research in Physics, 57,500.00**

**Robert Henry Eddy Fund (additional), . . . . . 11,500.00**

Fund for the Advancement of Astron. Science (1902), 20,054.91

Fund for Scholarship of the **Class of 1841 (additional), 1,000.00**

Amounts carried forward, . . . . . \$149,962.41 \$1,804,184.62

of the Treasurer of Harvard College,  
July 31, 1902.

INVESTMENTS AND SUNDRY PAYMENTS (*continued*).

Amounts brought forward, . . \$1,488,031.42 \$2,374,509.18

GENERAL INVESTMENTS (*continued*).

1,000 shares Post Office Square Building Trust, . . . . .	108,000.00	
225 " New York Central & Hudson River R.R., . . . . .	28,125.00	
4,000 rights to subscribe at par to 1,000 shares of American Tel. & Tel. Co. Stock, . . . . .	55,407.25	
Invested in notes during the year, . . . . .	545,000.00	
Accrued interest and expenses on bonds and notes bought, . . . . .	10,066.90	
Advances to Harvard Dining Association, . . . . .	85,202.08	
" Randall Hall Association, . . . . .	1,471.00	
" Sundry balances, . . . . .	37.00	
Baring Bros. & Co. in account, . . . . .	\$211.76	
Less expenses, . . . . .	1.19	210.57
		<u>2,266,551.17</u>

SPECIAL INVESTMENTS.

Price Greenleaf Fund.

\$32,200 Northern Pacific-Great Northern Joint 4% Bonds and Scrip (C. B. & Q. Coll.) of 1921, received in exchange for 161 shares Chicago, Burlington & Quincy R. R., at their book valuation, . . . . .	\$20,188.55	
7,500 Pennsylvania R. R. Conv. 3½'s of 1912 (50%), subscription at par, . . . . .	3,750.00	
3 shares New York Central & Hudson River R.R., . . . . .	875.00	
600 " Pennsylvania R.R., . . . . .	44,587.50	
100 " Paddock Building Trust (35%), . . . . .	3,500.00	
\$50,000 Note of Massachusetts Cotton Mills, . . . . .	50,000.00	122,401.05

Calvin Ellis Fund.

\$40,000 Northern Pacific-Great Northern Joint 4% Bonds (C. B. & Q. Coll.) of 1921, received in exchange for 200 shares Chicago, Burl. & Quincy R. R., at their book valuation, . . . . .	26,585.00	
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Professorship of Hygiene Fund.

\$16,000 Northern Pacific-Great Northern Joint 4% Bonds (C. B. & Q. Coll.) of 1921, received in exchange for 80 shares Chicago, Burl. & Quincy R. R., at their book valuation, . . . . .	15,681.85	
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Robert Troup Paine Fund.

\$3,000 Massachusetts 3½'s of January, 1938, . . . . .	3,390.00	
Amount carried forward, . . . . .		<u>\$4,809,058.25</u>

*General Statement of Receipts and Disbursements  
for the year ending*

RECEIPTS EXCLUSIVE OF INCOME (*continued*).

Amounts brought forward, . . . \$149,962.41 \$1,804,184.62

GIFTS FOR CAPITAL ACCOUNT (*continued*).

<b>John Appleton Haven Scholarship Fund, . . .</b>	10,000.00	
<b>George Higginson Professorship of Physiology Fund, . . . . .</b>	100,000.00	
<b>Jackson Professorship of Clinical Medicine Fund (additional), . . . . .</b>	12,500.00	
<b>C. L. Jones Scholarship Fund, . . . . .</b>	80,000.00	
<b>Lowell Fund for a Botanic Garden (additional), . .</b>	25 00	
<b>Charles Eliot Norton Fellowship Fund, . . . . .</b>	14,100.00	
<b>Henry L. Pierce Residuary Bequest (additional), . .</b>	3,000.00	
<b>John D. Rockefeller Gift, . . . . .</b>	308,758.17	
<b>Scholarship of the Class of 1877 Fund, . . . . .</b>	5,000.00	
<b>School of Comparative Medicine Fund (additional), . .</b>	1,000.00	
<b>David Sears Fund for Instruction in Neurology, . .</b>	25,000.00	
<b>Shattuck Professorship of Pathological Anatomy Fund (additional), . . . . .</b>	13,500.00	
<b>Henry Villard Fund, . . . . .</b>	50,000.00	
<b>Susan Cornelia Warren Fund, . . . . .</b>	5,000.00	727,845.58

SALES, ETC., GENERAL INVESTMENTS.

<b>\$56,000 Walter Baker &amp; Co. Limited 4½'s of 1903, called and paid off at par, . . . . .</b>	\$56,000.00	
<b>100,000 Bangor &amp; Aroostook R. R. (Van Buren Extension) 1st M. 5's of 1943, . . . . .</b>	117,125.00	
<b>39,800 Burl. &amp; Mo. River (Neb.) R. R. non. ex. 6's, called and paid off at par, . . . . .</b>	39,800.00	
<b>200,000 Chicago, Burl. &amp; Quincy R. R. 3½'s of 1949, .</b>	204,718.75	
<b>20,000 Eastern R. R. 1st M. 6's of 1906, . . . . .</b>	22,482.00	
<b>10,000 Fort Scott, South Eastern &amp; Memphis R. R. 1st M. 7's, called and paid off at 105, . . . . .</b>	10,500.00	
<b>100,000 Metropolitan West Side Elevated R. R. 1st M. 4's of 1938, . . . . .</b>	101,000.00	
<b>600 Northern Pacific-Great Northern Joint 4% Scrip (C. B. &amp; Q. Coll.), . . . . .</b>	585.00	
<b>1718 shares Chicago, Burlington &amp; Quincy R. R. exchanged at their book valuation for \$343,600 Northern Pacific-Great Northern Joint 4% Bonds and Scrip (C. B. &amp; Q. Coll.) of July, 1921, . . . . .</b>	164,910.92	
<b>808 shares N. Y. Central &amp; Hudson River R.R.,</b>	129,250.13	
<b>115 " Barristers Hall Trust, . . . . .</b>	12,802.70	
<b>104 " Paddock Building Trust (65% paid), . . . . .</b>	7,277.92	
<b>Amounts carried forward, . . . . .</b>	\$865,952.42	\$2,532,030.30

of the Treasurer of Harvard College,  
July 31, 1902.

INVESTMENTS AND SUNDRY PAYMENTS (*continued*).

Amount brought forward, . . . . . \$4,809,058.25

SPECIAL INVESTMENTS (*continued*).

University Houses and Lands.

Estate No. 16 Madison St., Cambridge, . .	\$2,987.75		
Taxes adjusted, . . . . .	12.25		
Legal expenses thereon, . . . . .	92.00	\$3,092.00	
Parcel of Land east of Randall Hall lot, Kirkland St., Cambridge, . . . . .	\$2,200.00		
Legal expenses thereon, . . . . .	127.55	2,327.55	5,419.55
Property received for the Fund for the Advancement of Astronomical Science (1902).			
\$5,000 Northern Pacific-Great Northern Joint 4% Bonds (C. B. & Q. Coll.) of 1921, . . . . .	\$4,800.00		
5 shares Fitchburg R. R. preferred, . . . . .	726.15		
12 " Old Colony R. R., . . . . .	2,528.76		
15 " Calumet & Hecla Mining Co., . . . . .	9,000.00		
\$3,000 Mortgage Note, due July 1, 1905, . . . . .	3,000.00	20,054.91	
Property received for Improvements and Additions to The Soldier's Field.			
\$5,000 City of Omaha 4's, . . . . .	\$5,200.00		
8,000 West End Street Railway 5's, . . . . .	8,082.22		
8,000 Illinois Steel Co. 5's, . . . . .	3,027.50	16,309.72	
Property received for the T. Jefferson Coolidge Fund for Research in Physics.			
625 shares Massachusetts Electric Companies, preferred, . .		57,500.00	
Property received for the Charles Eliot Norton Fellowship Fund.			
\$15,000 Northern Pacific-Great Northern Joint 4% Bonds (C. B. & Q. Coll.) of 1921, . . . . .		14,100.00	
Special deposit repaid, . . . . .		818.20	

Amount carried forward, . . . . . \$4,922,760.63

*General Statement of Receipts and Disbursements  
for the year ending*

**RECEIPTS EXCLUSIVE OF INCOME (continued).**

Amounts brought forward, . . . \$865,952.42 **\$2,532,030.20**

SALES, ETC., GENERAL INVESTMENTS (continued).

Reversion of Land and Buildings, corner of Court and Brattle Streets, Boston, . . . \$800,000.00		
Less broker's commission and legal expenses, . . . . .	3,168.75	296,831.25
Notes paid during the year, . . . . .	800,000.00	1,962,783.67

SALES, ETC., SPECIAL INVESTMENTS.

Sale of Investments of **Price Greenleaf Fund.**

\$2,000 Chicago, Burl. & Quincy R. R. 3½'s of 1949, .	\$1,990.00	
200 Northern Pacific-Great Northern Joint 4% Scrip (C. B. & Q. Coll.), . . . . .		195.00
161 shares Chicago, Burlington & Quincy R. R. exchanged at their book valuation for \$32,200 Northern Pacific-Great Northern Joint 4% Bonds and Scrip (C. B. & Q. Coll.) of July, 1921, . . . . .		20,188.55
800 rights Rutland R. R., preferred, . . . . .		6,400.00
800 shares " " " . . . . .		91,184.00
		119,957.55

Sale of investments of **David Ames Wells Fund.**

\$4,000 Adams Express Co. Deb. 4's of 1948, . . . . .	\$4,175.00	
2,000 Buffalo City Gas Co. 1st M. 5's of 1947, . . . . .	1,682.50	
50 shares Cleveland & Pittsburg R. R., . . . . .	4,796.37	
20 " Illinois Central R. R., . . . . .	2,922.10	
17 " Manhattan R'y, . . . . .	2,273.41	
15 " Northern Pacific R'y, preferred, . . . . .	1,500.00	
21 " Pennsylvania R. R., . . . . .	1,581.35	
40 " Pittsburg, Fort Wayne & Chicago R'y, . . . . .	7,724.20	
20 " West Virginia Central & Pittsburg R'y, . . . . .	1,700.00	
38 " The Pullman Co., . . . . .	7,779.09	
40 " Adams Express Co., . . . . .	8,154.20	
25 " Illinois & Miss. Telegraph Co., . . . . .	973.18	
25 " Northwestern " " . . . . .	1,516.92	
50 " Western Union " " . . . . .	4,605.25	
8 " General Electric Co., . . . . .	2,596.84	
8 " Buffalo City Gas Co., . . . . .	86.84	
4 " American Light & Traction Co., . . . . .	132.92	
16 " " " " pref., . . . . .	1,445.68	
83 " American Surety Co., . . . . .	7,048.97	
10 " Morton Trust Co., . . . . .	10,494.80	
10 " New York Security & Trust Co., . . . . .	13,714.80	
1 share New York Evening Post Publishing Co., . . . . .	199.73	
20 rights Illinois Central R. R., . . . . .	144.00	
21 " Pennsylvania R. R., . . . . .	9.00	87,257.15
Amount carried forward, . . . . .		\$4,702,028.57

*of the Treasurer of Harvard College,  
July 31, 1902.*

INVESTMENTS AND SUNDRY PAYMENTS (*continued*).

Amount brought forward, . . . . . \$4,922,760.68

Amount carried forward, . . . . . \$4,922,760.63

*General Statement of Receipts and Disbursements  
for the year ending*

**RECEIPTS EXCLUSIVE OF INCOME (continued).**

Amount brought forward, . . . . .	\$4,702,028.57	
<b>SALES, ETC., SPECIAL INVESTMENTS (continued).</b>		
Sale of investments of Advancement of Astronomical Science Fund of 1901.		
80 shares Massachusetts Electric Companies, preferred, . . . . .	\$2,781.90	
10 shares New York, New Haven & Hartford R. R.	2,154.80	
20 " West End Street Railway, . . . . .	1,934.80	6,871.50
Sale of investments of Advancement of Astronomical Science Fund of 1902.		
5 shares Fitchburg R. R., preferred, . . . . .	\$726.15	
12 " Old Colony R. R., . . . . .	2,528.76	3,254.91
Sale of investment of Calvin Ellis Fund.		
200 shares Chicago, Burl. & Quincy R. R. exchanged at their book valuation for \$40,000 Northern Pacific-Great Northern Joint 4% Bonds (C. B. & Q. Coll.) of July, 1921, . . . . .		26,585.00
Sale of investment of the Professorship of Hygiene Fund.		
80 shares Chicago, Burl. & Quincy R. R. exchanged at their book valuation for \$16,000 Northern Pacific-Great Northern Joint 4% Bonds (C. B. & Q. Coll.) of July, 1921, . . . . .		15,681.85
Sale of investments of the Gift for Improvements and Additions to The Soldier's Field.		
\$5,000 City of Omaha 4's, . . . . .	\$5,200.00	
8,000 West End Street Railway Co. 5's, . . . . .	8,082.22	
3,000 Illinois Steel Co. 5's, . . . . .	3,027.50	16,309.72
Note held for James Barr Ames Prize Fund, paid in part, . .		100.00
<b>SUNDRIES.</b>		
<b>Harvard Dining Association, to reduce debt, . . . . .</b>	<b>\$1,500.00</b>	
<b>Randall Hall Association, to reduce debt, . . . . .</b>	<b>600.00</b>	
<b>Hayward Estate, repaid to capital, . . . . .</b>	<b>2,000.00</b>	
Premiums on Bonds, repaid in part, . . . . .	14,038.67	
Advances for accrued interest and expenses on bonds and notes, repaid, . . . . .	9,078.01	
Advances to School of Veterinary Medicine, repaid in part, . . . . .	10,291.11	
Advances to Calvin and Lucy Ellis real estate, repaid in part, . . . . .	62.23	
Advances to Rotch Laboratory, repaid in part, . . . . .	37.62	
Loans to Students, repaid, . . . . .	1,588.16	
Sundry repayments, . . . . .	3,407.35	42,598.15
Amount carried forward, . . . . .		\$4,813,429.70



*of the Treasurer of Harvard College,  
July 31, 1902.*

INVESTMENTS AND SUNDRY PAYMENTS (*continued*).

Amount brought forward, . . . . . \$4,922,760.68

Amount carried forward, . . . . . \$4,922,760.68

*General Statement of Receipts and Disbursements  
for the year ending*

**RECEIPTS EXCLUSIVE OF INCOME** (continued).

Amount brought forward, . . . . . \$4,813,429.70

**Bursar's Sundry Accounts.**

Receipts during the year.

On account of <b>Harvard Dining Association</b> , . . .	\$196,167.54	
" <b>Randall Hall Association</b> , . . .	91,847.76	
On Sundry accounts, . . . . .	210,349.19	498,364.49

Balance, August 1, 1901.

Cash in <b>Suffolk National Bank</b> , . . . . .	\$36,480.66	
" <b>National Union Bank</b> , . . . . .	185,570.67	
" <b>New England Trust Co.</b> , . . . . .	3,228.32	
" <b>hands of Charles F. Mason, Bursar</b> , . . . . .	29,035.72	
Term Bills due in October, 1901, . . . . .	236,731.03	
" <b>overdue</b> , . . . . .	9,065.28	490,111.68
<b>Total</b> , . . . . .		<b>\$5,801,905.87</b>

of the Treasurer of Harvard College,  
July 31, 1902.

INVESTMENTS AND SUNDRY PAYMENTS (*continued*).

Amount brought forward, . . . . . \$4,922,760.68

**Bursar's Sundry Accounts.**

Payments during the year.

On account of Harvard Dining Association, . . .	\$200,840.93	
"    Randall Hall Association, . . .	93,447.13	
On sundry accounts, . . . . .	212,471.77	506,759.82

**Balance, July 31, 1902.**

Cash in Old Boston National Bank, . . . . .	\$96,114.57	
"    National Union Bank, . . . . .	11,592.73	
"    City Trust Co., . . . . .	1,056.02	
"    hands of Charles F. Mason, Bursar, . . . . .	16,975.62	
Term Bills due in October, 1902, . . . . .	238,881.23	
"    overdue, . . . . .	7,765.25	372,385.42
<b>Total, . . . . .</b>	<b>\$5,801,905.87</b>	

*The following Account exhibits the State of the Property, as entered upon the Treasurer's Books, July 31, 1902.*

Separate Investments, as stated in detail on pages 3, 4, 5 and 6 of this report, consisting of

Railroad Bonds, . . . . .	\$318,227.95	
Sundry Bonds, . . . . .	351,937.75	
Railroad Stocks, . . . . .	319,767.05	
Sundry Stocks, . . . . .	40,254.15	
University Houses and Lands, . . . . .	505,740.89	
<b>Bussey</b> Real Estate, . . . . .	392,710.18	
Other Real Estate, . . . . .	106,805.30	
Massachusetts Cotton Mills' Note, . . . . .	50,000.00	
Sundries, . . . . .	31,369.44	
Cash in City Trust Co., . . . . .	1,056.02	
"    Old Boston National Bank, . . . . .	690.00	\$2,118,558.73

And "General Investments," as follows:—

**Mortgages and Notes.**

Mortgages, . . . . .	\$283,000.00	
Boott Cotton Mills' Note, . . . . .	100,000.00	
Cocheco Manufacturing Co.'s Notes, . . . . .	150,000.00	
Manchester Cotton Mills' Note, . . . . .	50,000.00	
Massachusetts Cotton Mills' Note, . . . . .	50,000.00	
Merchants & Miners Transportation Co.'s Notes, . . . . .	45,000.00	
Merrimack Manufacturing Co.'s Notes, . . . . .	100,000.00	728,000.00

**\*United States Bonds.**

400,000 United States 4's of 1925, . . . . .	462,249.39
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**Railroad Bonds.**

\$100,000 Baltimore & Ohio 4's of 1948, . . . . .	\$96,625.00
100,000 Baltimore & Ohio Conv. Deb. 4's of 1911, . . . . .	100,710.50
100,000 Baltimore & Ohio (S. W. Division) 1st M. 3½'s of 1925, . . . . .	89,750.00
100,000 Baltimore & Ohio (Pittsburg, Lake Erie & West Virginia System) Ref. M. 4's of 1941, . . . . .	99,250.00
125,000 Bangor & Aroostook Cons. Ref. M. 4's of 1951, . . . . .	118,750.00
290,400 Burl. & Mo. R. in Nebr. non ex. 6's, . . . . .	296,482.28
446,000 Chic., Burl. & Quincy 3½'s of 1949, . . . . .	459,911.09
100,000 Chic. & No. W. (Madison Extension) 1st M. 7's of 1911, . . . . .	115,209.11
100,000 Chicago, Rock Island & Pacific 4's of 1988, . . . . .	106,762.98

Amounts carried forward, . . . \$1,483,450.96 **\$3,308,808.12**

\* These \$400,000 of United States 4's of 1925 have, from Dec. 22, 1899, been lent to the National Shawmut Bank, which pays to the College, for the use, interest at the rate of two per cent. a year, in addition to the interest of four per cent. received by the bank from the bonds, thus making the income of the College from the bonds equal to six per cent. upon their par value.

Amounts brought forward, . . . \$1,483,450.96 \$3,808,808.12

**Railroad Bonds (continued).**

\$100,000 Chicago Terminal Transfer 1st M. 4's		
of 1947, . . . . .	95,772.50	
223,000 Eastern, 1st M. 6's of 1906, . . . . .	228,402.08	
£19,600 " " " Sterling of 1906,	95,383.40	
\$60,000 Fort Scott, So. E. & Mem. 1st M. 7's, .	59,108.69	
100,000 Indiana, Ill. & Iowa 1st M. 4's of 1950,	96,500.00	
100,000 Kansas City, Fort Scott & Memphis		
Cons. M. 6's of 1928, . . . . .	124,469.44	
300,000 Long Island Unified M. 4's of 1949, . .	283,257.50	
100,000 Massachusetts Electric Companies 4½%		
Gold Coupon Notes of 1906, . . . . .	98,000.00	
100,000 Metrop. West Side Elevated 4's of 1938,	91,746.25	
100,000 " " " Ext. M. 4's		
of 1938, . . . . .	97,000.00	
100,000 Minneapolis Union 1st M. 5's of 1922, .	102,668.32	
200,000 New York Central & H. R. (L. S. &		
M. S. Coll.) 3½'s of 1938, . . . . .	202,414.40	
200,000 New York, Ontario & Western Ref. M.		
4's of 1922, . . . . .	210,428.06	
343,000 Northern Pacific-Great Northern Joint		
4's (C. B. & Q. Coll.) of 1921, . . . . .	164,325.92	
100,000 Oregon Short Line Cons. 1st M. 5's of		
1946, . . . . .	118,346.50	
100,000 Pennsylvania Co. 3½'s of 1916, . . . .	97,875.00	
46,500 Pennsylvania Conv. 3½'s of 1912 (50%		
paid), . . . . .	23,273.00	
100,000 Rutland Car Trust 4½'s of 1905, . . . .	100,810.00	
100,000 St. Louis & San Francisco Ref. M. 4's		
of 1951, . . . . .	97,125.00	
100,000 Second Ave. (N. Y.) Con. M. 5's of 1948,	118,158.04	
100,000 Third Avenue (N. Y.) 1st Consol. M.		
4's of 2000, . . . . .	103,919.60	
400,000 Union Pacific 1st M. & L. G. 4's of 1947,	358,114.75	4,445,544.86

**Sundry Bonds.**

\$200,000 American Bell Tel. Co. 4's of 1908, . .	\$208,049.98
200,000 American Tel. & Tel. Co. 4's of 1929, .	196,000.00
128,000 Walter Baker & Co. Ltd. 4½'s of 1903, .	128,000.00
145,000 Broadway Realty Co. Purchase money	
1st M. 5's of 1926, . . . . .	156,851.77
100,000 Chicago Edison Co. 1st M. 5's of 1926, .	106,969.60
250,000 Chicago Junction Railways and Union	
Stock Yards Coll. Trust 5's of 1915, .	250,261.90
100,000 Chicago Junction Railways and Union	
Stock Yards 4's of 1940, . . . . .	98,500.00
100,000 Metrop. Tel. & Tel. Co. 1st M. 5's of 1918,	99,500.00
100,000 Montreal Light, Heat and Power Co. 1st	
M. Coll. Tr. 4½'s of 1932, . . . . .	100,983.33

Amounts carried forward, . . . \$1,340,116.58 \$7,754,352.48

Amounts brought forward, . . .		\$1,340,116.58	\$7,754,352.48
<b>Sundry Bonds (continued).</b>			
\$100,000 Municipal Gas & Electric Co. of Rochester, N. Y., 1st M. 4½'s of 1942, . . .	100,000.00		
100,000 New England Tel. & Tel. Co. 6's of 1906,	101,187.48		
100,000 " " " 5's of 1916,	118,176.46		
100,000 St. Louis National Stock Yards Co. 4's of 1930, . . . . .	99,500.00	1,753,980.52	
<b>Railroad Stocks.</b>			
1725 shares N. Y. Central & Hud. River R. R., . . .	\$133,862.37		
8667 " Pennsylvania R. R., . . . . .	244,037.54	377,899.91	
<b>Manufacturing and Telephone Stocks.</b>			
12 shares Amoskeag Manufacturing Co., . . .	\$3,654.00		
187 " Merrimack " " . . .	18,700.00		
24 " Pacific Mills, . . . . .	16,668.29		
4000 rights American Tel. & Tel. Co., . . . . .	55,407.25	94,429.54	
<b>Real Estate Trust Stocks.</b>			
1000 shares Essex Street Trust, . . . . .	\$100,000.00		
1000 " Barristers Hall Trust, . . . . .	92,766.00		
1089 " Paddock Building Trust, . . . . .	104,363.72		
1000 " Post Office Square Building Trust, . . . . .	103,000.00	400,129.72	
<b>Real Estate.</b>			
Adams Estate, Washington Street, Boston, . . .	\$250,000.00		
Amory Estate, Franklin Street, Boston, . . .	165,615.81		
Estate, Haymarket Square, Boston, . . . . .	58,913.52		
Gerrish Block, Blackstone and North Streets, Boston, . . . . .	192,875.75		
Gray Estate, Washington Street, Boston, . . .	834,231.77		
Hayward Estate, Washington Street, Boston, . .	576,361.88		
Lowell Estate, Washington Street, Boston, . . .	464,368.91		
Townsend Estate, Hawkins Street, Boston, . . .	44,569.49		
Webb Estate, Washington Street, Boston, . . .	164,604.79	2,751,541.92	
<b>Sundries.</b>			
Advances to Bussey Trust, . . . . .	\$29,785.51		
" Medical School Undertaking, . . .	472,588.60		
" Observatory, . . . . .	2,921.85		
" School of Veterinary Medicine, . .	14,114.90		
" Peabody Museum of American Archaeology and Ethnology, . .	2,278.60		
" Botanic Department, . . . . .	5,307.35		
" Harvard Dining Association, . .	46,224.69		
" Randall Hall Association, . . . .	34,302.27		
" Calvin and Lucy Ellis real estate,	63.37		
" Classical Publication Fund of the Class of 1856, . . . . .	963.91		
" Sundry Accounts, . . . . .	129.15		
Amounts carried forward, . .		\$608,675.20	\$13,132,334.09

	Amounts brought forward, . . .	\$608,675.20	\$18,182,334.09
<b>Sundries (continued).</b>			
	Baring Brothers & Co., . . . . .	2,893.16	
	Term bills due in October, 1902. . . . .	238,881.23	
	“ overdue, . . . . .	<u>7,765.25</u>	858,214.84
	<b>Cash in Old Boston National Bank, . . . . .</b>	<b>\$96,114.57</b>	
	“ National Union Bank, . . . . .	10,902.73	
	“ hands of Charles F. Mason, Bursar, . . . . .	<u>16,975.62</u>	<u>123,992.92</u>
	<b>Total, . . . . .</b>		<b>\$14,114,541.85</b>

The foregoing Property represents the following Funds and Balances,\* and is answerable for the same.

Principal, Aug. 1, 1901.	UNIVERSITY FUNDS.	Principal, July 31, 1902.
\$4,950.00	Andrew Bigelow (1898), . . . . .	\$4,950.00
92,500.00	Robert C. Billings (1900) (appropriated in 1902 to the Medical School Undertaking), . . . . .	
5,000.00	Stanton Blake (1899), . . . . .	5,000.00
4,771.83	Charlotte F. Blanchard (1891), . . . . .	4,771.83
5,250.00	Samuel D. Bradford (1866), . . . . .	5,250.00
12,500.00	John W. Carter (1898), . . . . .	12,500.00
154.76	Thomas Cotton (1727), . . . . .	154.91
22,000.00	John Cowdin (1888), . . . . .	22,000.00
115,966.56	George B. Dorr (1882), . . . . .	115,966.56
48,458.50	George Draper (1892), . . . . .	48,458.50
45,000.00	R. H. Eddy (1901), . . . . .	56,500.00
101,225.49	Harvard Ellis (1895), . . . . .	101,225.49
5,078.85	John Davis Williams French (1901), . . . . .	5,322.09
20,571.18	Gore (1834), . . . . .	20,571.18
25,000.00	John C. Gray (1881), . . . . .	25,000.00
20,000.00	Walter Hastings (1888), . . . . .	20,000.00
5,000.00	George Baxter Hyde (1895), . . . . .	5,000.00
132,288.80	Insurance and Guaranty (1860), . . . . .	132,288.80
16,871.68	Leonard Jarvis (1859), . . . . .	16,871.68
10,000.00	Henry P. Kidder (1894), . . . . .	10,000.00
10,000.00	Joseph Lee (1802), . . . . .	10,000.00
10,000.00	Theodore Lyman (1898), . . . . .	10,000.00
81,950.54	Henry T. Morgan (1883), . . . . .	81,950.54
15,750.00	Israel Munson (1844), . . . . .	15,750.00
113,817.44	Francis E. Parker (1886), . . . . .	113,817.44
30,000.00	William Perkins (1888), . . . . .	30,000.00
51,000.71	Henry L. Pierce (1898), . . . . .	50,814.19
547,900.00	Henry L. Pierce (Residuary) (1898), . . . . .	
	Total received, . . . . . \$758,000.00	
	Appropriated for Pierce Hall, . . . . . \$238,219.90	
	Appropriated for the Medical School Undertaking, 350,000.00	
	<u>588,219.90</u>	164,780.10
63,603.76	President's (1883), . . . . .	63,671.55
361,169.59	Retiring Allowance (1879), . . . . .	364,858.75
23,370.03	John L. Russell (1889), . . . . .	23,370.03
46,913.13	Isaac Sweetser (1894), . . . . .	46,913.13
5,000.00	Seth Turner (1883), . . . . .	5,000.00
	Henry Villard (1902), . . . . .	50,000.00
100,000.00	William F. Weld (1893), . . . . .	100,000.00
<u>\$2,153,061.30</u>	. . . Amounts carried forward, . . . . .	<u>\$1,742,255.72</u>

\* The Funds and Balances were re-classified in 1901 and the dates of the establishment of the Funds were printed after their titles.



Principal,  
Aug. 1, 1901.

Principal, July 31, 1902.

\$2,153,061.30	. . .	Amounts brought forward, . . . . .	. . . . .	\$1,742,255.72
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## \* COLLEGE FUNDS.

8,534.95	John W. P. Abbot (1874), . . . .	\$8,944.63
27,748.64	Alford Professorship (1765), . . . .	27,748.64
6,230.00	Daniel Austin (1879), . . . . .	6,230.00
1,050.00	John A. Blanchard (1873), . . . .	1,050.00
39,780.00	Botanic Department (1880), . . . .	39,780.00
28,337.40	Boylston Professorship (1772), . . .	28,337.40
11,161.27	Francis James Child Mem. (1897), . . .	11,146.01
6,026.13	Classical Publ. F'd of Class of 1856 (1888), . . . . .	7,105.12
150,297.54	Class Subscription (1870), . . . . .	150,445.04
	<b>T. Jefferson Coolidge Fund for</b>	
	Research in Physics, . . . . .	57,792.30
3,340.22	Paul Dudley (1751), . . . . .	3,400.54
21,619.50	Eliot Professorship (1814), . . . . .	21,619.50
10,000.00	Eliot " (Jon. Phillips' gift) (1854), . . . . .	10,000.00
3,500.01	Erving Professorship (1791), . . . .	3,500.01
35,990.99	Fisher " (1834), . . . . .	35,990.99
375.97	Henry Flynt (1760), . . . . .	394.02
16,240.38	Fund for Permanent Tutors (1796), . . .	16,240.38
1,033.57	Fund for Religious Services (1887), . .	1,033.57
6,176.21	Gospel Church (1868), . . . . .	6,324.44
345.37	Gray Herbarium (balance), . . . . .	2,360.30
32,511.00	Asa Gray Memorial (1898), . . . . .	32,511.00
21,599.46	Asa Gray Professorship of Systematic Botany (1897), . . . . .	21,628.01
194,455.95	Gurney (1888), . . . . .	195,039.84
15,113.53	Harvard Oriental Series (1899), . . . .	15,124.00
20,655.91	Herbarium (1865), . . . . .	20,655.91
20,217.08	Hersey Professorship (1772), . . . . .	20,217.08
21,744.18	Hersey Professorship (Thomas Lee's gift) (1856), . . . . .	21,744.18
34,517.60	Hollis Professorship of Divinity (1726), . . .	34,517.60
3,747.33	Hollis " of Mathematics (1713), . . . . .	3,747.33
5,453.37	Ingersoll Lecture (1894), . . . . .	5,675.11
3,155.81	Jefferson Physical Lab'y (balance), . . . .	3,371.62
9,608.82	Lectures on Political Economy (1889), . . . .	10,070.05
15,796.97	Lee Fund for Reading (1863), . . . . .	15,796.97
104,416.29	Henry Lee Professorship (1900), . . . . .	107,178.26
8,043.01	Joseph Lovering (1891), . . . . .	8,367.18
66,382.31	Lowell Fund for a Botanic Garden (1882) (formerly Professorship of Natural History, 1805), . . . . .	66,407.31
\$3,108,268.07	. . . Amounts carried forward, . . . . .	\$1,021,494.34
		\$1,742,255.72

\* Including some actually used in the Graduate School.

Principal, Aug. 1, 1901.		Principal, July 31, 1902.
\$3,108,268.07	. . . Amounts brought forward, . . .	\$1,021,494.34 \$1,742,255.72
43,062.93	McLean Professorship (1834), . . .	43,062.93
21,232.69	William B. Noble Lectures (1898),	22,175.86
13,996.14	Daniel H. Peirce (1876), . . . .	14,063.32
21,000.00	Perkins Professorship (1841), . . .	21,000.00
31,500.00	Jonathan Phillips (1861), . . . .	31,500.00
75,000.00	Physical Laboratory Endowm't(1881),	75,000.00
25,020.19	Plummer Professorship (1854), . . .	25,020.19
52,500.00	Pope " (1868), . . . .	52,500.00
185,118.71	Professorship of Hygiene (1899), . . .	190,851.69
300,000.00	Nelson Robinson, Jr. (1899), . . . .	305,066.88
56,441.25	Bumford Professorship (1819), . . .	56,441.25
2,000.00	John L. Russell (1889), . . . .	2,000.00
60,000.00	Gurdon Saltonstall (1901), . . . .	60,494.93
4,353.73	George William Sawin (1890),	4,364.73
1,418.92	Schol. & Benef. money returned (bal.),	1,734.26
	Barthold Schlesinger (1901), . . . .	1,030.94
23,139.83	Smith Professorship (1816), . . . .	23,139.83
12,811.14	Josiah Stickney (1899), . . . .	12,811.14
16,303.12	John E. Thayer (1885), . . . .	16,295.84
1,232.34	Elizabeth Torrey (1896), . . . .	1,174.81
10,697.53	Henry Warren Torrey (1890), . . . .	10,590.34
101,798.41	Unknown Memorial (1898), . . . .	100,855.67
16,784.74	Samuel Ward (1880), . . . .	17,449.24
6,487.75	Cyrus M. Warren (1898), . . . .	6,779.68
117,873.44	Henry C. Warren (1899), . . . .	121,526.76
5,194.78	Sylvester Waterhouse (1896), . . . .	5,344.14
50,000.00	Increase S. Wheeler (1889), . . . .	50,000.00
994.63	Chauncey Wright (1884), . . . .	968.47
3,408.15	Gifts for land in New Hampshire(bal.),	1,438.52
448.06	" Classical Library (balance),	281.37
1,545.93	" Sugar-cane investigation, etc. (balance), . . . . .	1,941.49
1,989.86	" Cases, etc., at Botanic Gar- den (balance), . . . . .	1,797.71
2,571.13	" Sanskrit Department (bal.),	1,352.70
20,048.42	" Semitic Collection (balance),	16,932.57
1,531.11	" " Library, "	1,106.20
3,241.62	" Collections for a Germanic Museum (balance), . . . .	322.52
18,376.39	" Books, Prints, Casts, etc., for Dept. of Architec. (bal.),	2,857.91
76.15	" Physical Research "	53.15
12.20	" Music 7 "	
5,329.36	" Salaries "	3,460.53
1,734.49	Sundry Gifts (unexpended balances),	2,043.02
\$4,424,538.21	. . . Amounts carried forward, . . .	\$2,328,344.93 \$1,742,255.72

Principal, Aug. 1, 1901.		Principal, July 31, 1902.
\$4,424,538.21	. . . Amounts brought forward, . . .	\$2,328,344.93 \$1,742,255.72

## FELLOWSHIP FUNDS.

11,077.67	<b>Ozias Goodwin Memorial</b> (1889),	11,159.41
10,817.59	<b>Harris</b> (1868), . . . . .	10,836.85
10,641.99	<b>John Thornton Kirkland</b> (1871),	10,927.81
11,441.42	<b>Henry Lee Memorial</b> (1889), . .	11,540.59
800.00	<b>Charles Eliot Norton</b> (1901), .	14,100.00
12,553.55	<b>Robert Treat Paine</b> (1887), . .	12,656.14
55,447.41	<b>John Parker</b> (1873), . . . . .	56,533.87
81,878.96	<b>Rogers</b> (1869), . . . . .	81,959.15
11,296.98	<b>Henry Bromfield Rogers Memo-</b> <b>rial</b> (1889), . . . . .	11,389.24
400.00	<b>South End House</b> (balance), . . . .	125.00
11,624.10	<b>John Tyndall</b> (1885), . . . . .	11,807.05
11,354.99	<b>James Walker</b> (1881), . . . . .	11,400.03
22,466.61	<b>Whiting</b> (1896), . . . . .	22,645.08

## SCHOLARSHIP FUNDS.

3,697.79	<b>Abbot</b> (1852), . . . . .	3,725.29
1,803.27	<b>Alford</b> (1785), . . . . .	1,889.81
5,448.82	<b>Bartlett</b> (1881), . . . . .	5,377.08
5,699.45	<b>Bassett</b> (1876), . . . . .	5,708.00
12,843.41	<b>Bigelow</b> (1865), . . . . .	12,959.87
2,099.16	<b>Borden</b> (1896), . . . . .	2,199.91
112,621.37	<b>Bowditch</b> (1864), . . . . .	112,985.50
2,164.34	<b>Bright</b> (balance), . . . . .	2,668.19
3,752.79	<b>Browne</b> (1687), . . . . .	3,782.98
5,117.49	<b>Morey Willard Buckminster</b> (1898), . . . . .	5,163.11
32,420.86	<b>Burr</b> (1895), . . . . .	32,843.73
6,091.26	<b>Ruluff S. Choate</b> (1884), . . . .	6,108.63
8,214.79	<b>Class of 1802</b> (1870), . . . . .	8,309.11
8,136.14	“ <b>1814</b> (1853), . . . . .	8,161.67
6,413.33	“ <b>1815</b> (Kirkland) (1852),	6,471.15
4,442.63	“ <b>1817</b> (1852), . . . . .	4,555.91
3,459.15	“ <b>1828</b> (1882), . . . . .	3,475.18
4,801.47	“ <b>1835</b> (1853), . . . . .	4,856.92
4,049.02	“ <b>1841</b> (1871), . . . . .	5,124.03
5,088.73	“ <b>1852</b> (Dana) (1876), . .	5,133.00
15,371.66	“ <b>1856</b> (1885), . . . . .	15,509.52
4,622.91	“ <b>1867</b> (1886), . . . . .	4,669.81
	“ <b>1877</b> (1902), . . . . .	5,030.00
5,250.00	“ <b>1883</b> (1900), . . . . .	5,312.00
11,739.73	<b>Crowninshield</b> (1877), . . . . .	11,853.25
600.00	<b>W. H. Cudworth</b> (balance), . .	600.00
5,367.73	<b>Francis H. Cummings</b> (1898), .	5,425.39
\$4,902,156.78	. . . Amounts carried forward, . . .	\$2,830,329.04 \$1,742,255.72

Principal, Aug. 1, 1901.		Principal, July 31, 1902.
\$4,902,156.78	. . . Amounts brought forward, . . .	\$2,830,329.04
5,516.08	<b>Geo. and Martha Derby</b> (1881),	5,530.80
4,965.05	<b>Julius Dexter</b> (1892), . . . . .	4,970.03
2,725.80	<b>O. W. Doe</b> (1893), . . . . .	2,756.65
5,467.99	<b>W. S. Eliot</b> (1875), . . . . .	5,480.45
39,906.19	<b>Joseph Eveleth</b> (1896), . . . . .	40,355.01
2,105.42	<b>Fall River</b> (1898), . . . . .	2,126.46
6,169.30	<b>Farrar</b> (1878), . . . . .	6,298.75
11,169.50	<b>Richard Augustine Gambrill</b> (1890), . . . . .	11,280.61
7,048.17	<b>Charles Haven Goodwin</b> (1889),	7,081.23
4,142.87	<b>Greene</b> (1863), . . . . .	4,191.78
200.00	<b>Price Greenleaf</b> (balance), . . .	400.00
23,211.52	<b>William Hilton</b> (1897), . . . . .	23,605.70
	<b>John Appleton Haven</b> (1902), . .	10,020.02
10,484.57	<b>Ebenezer Rockwood Hoar</b> (1895),	10,587.85
6,200.84	<b>Levina Hoar</b> (1876), . . . . .	6,248.49
13,508.42	<b>Hodges</b> (1878), . . . . .	13,588.01
6,092.91	<b>Hollis</b> (1722), . . . . .	6,160.87
10,686.96	<b>Henry B. Humphrey</b> (1890), . . .	10,749.94
	<b>C. L. Jones</b> (1901), . . . . .	30,240.00
10,222.59	<b>G. E. Lowell</b> (1886), . . . . .	10,328.77
3,777.78	<b>Matthews</b> (balance), . . . . .	2,834.65
6,026.40	<b>Merrick</b> (1888), . . . . .	6,048.99
8,164.51	<b>Morey</b> (1868), . . . . .	8,206.43
5,659.05	<b>Lady Mowison</b> (1643), . . . . .	5,730.68
5,487.16	<b>Howard Gardner Nichols</b> (1897),	5,550.54
5,011.88	<b>Lucy Osgood</b> (1878), . . . . .	5,252.46
6,378.20	<b>Pennoyer</b> (1670), . . . . .	6,524.08
4,202.76	<b>Perkins</b> (1869), . . . . .	4,254.50
1,486.30	<b>Wendell Phillips Mem'l</b> (1895),	1,490.97
350.00	<b>Ricardo Prize</b> (balance), . . . . .	350.00
1,292.87	<b>Rodger</b> (1883), . . . . .	1,204.93
3,457.92	<b>Henry B. Rogers</b> (1859), . . . . .	3,423.90
5,576.28	<b>Edward Russell</b> (1877), . . . . .	5,643.93
5,418.82	<b>Sales</b> (1893), . . . . .	5,512.27
10,732.37	<b>Saltonstall</b> (1739), . . . . .	11,072.51
8,275.57	<b>Leverett Saltonstall</b> (1895), . .	8,406.16
6,890.37	<b>Mary Saltonstall</b> (1730), . . . . .	6,921.09
	<b>James Savage</b> (balance), . . . . .	100.00
3,234.45	<b>Sever</b> (1868), . . . . .	3,239.68
10,692.58	<b>Sewall</b> (1696), . . . . .	10,872.50
48,462.63	<b>Shattuck</b> (1854), . . . . .	48,838.35
5,959.32	<b>Slade</b> (1877), . . . . .	6,078.69
4,880.39	<b>Story</b> (1864), . . . . .	4,440.63
2,663.72	<b>Stoughton</b> (1701), . . . . .	2,729.48
2,182.93	<b>Swift</b> (1899), . . . . .	2,287.72
77,139.23	<b>Thayer</b> (1857), . . . . .	77,741.90
\$5,314,889.40	. . . Amounts carried forward, . . .	\$3,287,082.40
		\$1,742,255.72

Principal, Aug. 1, 1901.		Principal, July 31, 1902.
\$5,814,889.40	. . . Amounts brought forward, . . .	\$3,287,082.40 \$1,742,255.72
4,118.22	Gorham Thomas (1865), . . . . .	4,160.64
7,524.84	Toppan (1868), . . . . .	7,585.49
25,082.57	Townsend (1861), . . . . .	25,869.89
4,575.46	Walcott (1855), . . . . .	4,695.06
10,830.52	Christopher M. Weld (1899), . . . . .	10,426.41
5,221.32	Jacob Wendell (1899), . . . . .	5,271.98
11,287.61	Whiting (1874), . . . . .	11,496.10

## BENEFICIARY FUNDS.

500.73	Nathaniel Appleton (1772), . . . . .	524.78
1,652.58	Frank Bolles Memorial (1894), . . . . .	1,685.92
1,373.29	William Brattle (1717), . . . . .	1,489.19
894.18	Thomas Danforth (1724), . . . . .	937.09
5,448.73	Moses Day (1880), . . . . .	5,448.73
357.65	John Ellery (1788), . . . . .	374.83
1,333.34	Exhibitions (1796), . . . . .	1,333.34
670.69	Thomas Fitch (1737), . . . . .	702.90
385.52	Ephraim Flynt (1723), . . . . .	404.05
134.07	Henry Flynt (1760), . . . . .	140.50
400.81	Henry Gibbs (1732), . . . . .	420.06
2,655.11	John Glover (1658), . . . . .	2,782.55
7,585.48	Price Greenleaf Aid (balance), . . . . .	7,786.09
321.87	Edward Holyoke (1743), . . . . .	337.33
2,124.18	Robert Keyne (1659), . . . . .	2,226.08
879.10	Mary Lindall (1812), . . . . .	921.29
5,210.51	Susan B. Lyman (1899), . . . . .	5,460.64
187.76	Anne Mills (1725), . . . . .	196.78
10,812.36	Munroe (1880), . . . . .	10,855.32
1,992.50	Palfrey Exhibition (1821), . . . . .	2,008.12
4,331.68	Dr. A. P. Peabody Memorial (1896), . . . . .	4,408.02
178.83	Joseph Sewall (1765), . . . . .	187.42
14,149.95	Alexander W. Thayer (1899), . . . . .	14,349.15
11,155.10	Quincy Tufts (1877), . . . . .	11,155.10
241.46	Benjamin Wadsworth (1737), . . . . .	253.08

## PRIZE FUNDS.

1,361.10	James Gordon Bennett (1893), . . . . .	1,426.48
14,451.17	Bowdoin Prizes for Dissertations (1791), . . . . .	29,414.82
3,618.20	Boylston Prizes for Elocution (1817), . . . . .	3,591.62
5,148.11	Coolidge Debating (1899), . . . . .	5,195.21
100.00	Dante (balance), . . . . .	100.00
1,796.65	Edward Hopkins Gift for "De- turs" (1718) (balance), . . . . .	1,899.14
1,059.96	Sales (1892), . . . . .	1,065.84
2,502.55	John O. Sargent (1889), . . . . .	2,622.69
\$5,488,034.56	. . . Amounts carried forward, . . .	\$3,477,741.98 \$1,742,255.72

<u>Principal, Aug 1, 1901.</u>		<u>Principal, July 31, 1902.</u>
\$5,488,084.56	. . . Amounts brought forward, . . .	\$3,477,741.98 \$1,742,255.72
7,074.47	<b>George B. Sohler</b> (1890), . . . . .	7,000.00
3,180.51	<b>Charles Sumner</b> (1874), . . . . .	3,233.20
3,508.52	<b>Robert N. Toppan</b> (1894), . . . . .	3,676.95
2,090.60	<b>Philip Washburn</b> (1899), . . . . .	2,115.97
78,426.46	<b>David A. Wells</b> (1901), . . . . .	93,806.66
		3,587,074.76

## LIBRARY FUNDS.

2,122.62	<b>Bowditch</b> (1861), . . . . .	\$2,122.60
195.98	<b>Bright</b> (balance), . . . . .	166.17
558.04	Fund of the <b>Class of 1851</b> (1899),	584.82
549.49	“ “ “ <b>1851 (C. F.</b>	
	<b>Dunbar's Gift</b> (1899), . . . . .	575.84
27,783.45	<b>Edwin Conant</b> (1892), . . . . .	27,758.74
25,978.28	<b>Constantius</b> (1886), . . . . .	25,992.72
5,308.72	<b>Denny</b> (1875), . . . . .	5,302.03
5,309.08	<b>Farrar</b> (1871), . . . . .	5,299.73
3,195.34	<b>Haven</b> (1844), . . . . .	3,187.68
10,079.59	<b>Hayes</b> (1885), . . . . .	10,086.23
5,298.67	<b>Hayward</b> (1864), . . . . .	5,295.80
	<b>R. M. Hodges</b> (balance), . . . . .	368.79
2,373.12	<b>Hollis</b> (1781), . . . . .	2,369.88
2,147.96	<b>Homer</b> (1871), . . . . .	2,133.80
500.00	<b>Jarvis</b> (1885), . . . . .	500.00
5,320.27	<b>Lane</b> (1863), . . . . .	5,302.13
26,034.62	<b>Lowell</b> (1881), . . . . .	26,269.29
60,724.96	<b>Minot</b> (1870), . . . . .	60,520.35
7,180.76	<b>Lucy Osgood</b> (1878), . . . . .	7,145.32
7,040.22	<b>Mary Osgood</b> (1860), . . . . .	7,021.73
3,942.08	<b>Sales</b> (1892), . . . . .	3,949.25
5,307.75	<b>Salisbury</b> (1858), . . . . .	5,292.61
20,138.53	<b>Sever</b> (1878), . . . . .	20,180.15
4,000.48	<b>Shapleigh</b> (1801), . . . . .	3,979.82
	<b>George B. Sohler</b> (balance), . . . . .	65.26
10,582.12	Subscription for Library (1859), . . . . .	10,717.38
87,621.50	<b>Sumner</b> (1875), . . . . .	87,611.34
5,113.14	<b>Kenneth Matheson Taylor</b> (1899),	5,091.66
11,925.34	<b>Daniel Treadwell</b> (1885), . . . . .	11,925.34
5,268.09	<b>Ichabod Tucker</b> (1875), . . . . .	5,231.63
15,901.02	<b>Walker</b> (1875), . . . . .	15,910.44
5,299.60	<b>Ward</b> (1858), . . . . .	5,301.74
236.41	<b>Waterston Gift</b> (balance), . . . . .	247.74
20,122.29	<b>J. Huntington Wolcott</b> (1891),	20,169.70
100,000.00	<b>Eben Wright</b> (1883), . . . . .	100,000.00
1,735.43	Sundry Gifts (unexpended bals.), . . . . .	2,048.87
		445,726.53
\$6,027,210.02	. . . Amounts carried forward, . . . . .	\$5,775,057.01

<u>Principal, Aug. 1, 1901.</u>	<u>Principal, July 31, 1902.</u>
\$6,027,210.02 . . . Amounts brought forward, . . . . .	\$5,775,057.01

## DIVINITY SCHOOL FUNDS.

28,219.07	Divinity School (balance), . . . . .	\$87,254.88
71,427.02	New Endowment (1879), . . . . .	71,427.02
17,000.00	Oliver Ames (1880), . . . . .	17,000.00
525.00	Hannah C. Andrews (1836), . .	525.00
890.00	Daniel Austin (1880), . . . . .	890.00
1,000.00	Adams Ayer (1869), . . . . .	1,000.00
7,875.00	Joseph Baker (1876), . . . . .	7,875.00
4,780.14	Beneficiary money returned (balance),	2,057.18
3,692.06	Rushton Dashwood Burr (1894),	3,869.28
87,583.74	Bussey Professorship (1862), . .	87,583.74
2,177.95	Joshua Clapp (1836), . . . . .	2,177.95
5,000.00	Edwin Conant (1892), . . . . .	5,000.00
20,280.38	Dexter Lectureship (1810), . . .	20,280.38
46,288.69	Frothingham Professorship (1892),	48,510.57
1,050.00	Abraham W. Fuller (1847), . .	1,050.00
911.84	Lewis Gould (1852), . . . . .	911.84
688.66	Louisa J. Hall (1898), . . . . .	721.73
6,008.48	Hancock Professorship (1765), .	6,008.43
76,885.81	Charles L. Hancock (1891), . .	76,885.81
5,000.00	Haven (1898), . . . . .	5,000.00
1,050.00	Samuel Hoar (1857), . . . . .	1,050.00
10,000.00	Henry P. Kidder (1881), . . .	10,000.00
9,184.69	Henry Lienow (1841), . . . . .	9,184.69
1,050.00	Caroline Merriam (1867), . . .	1,050.00
16,015.81	Parkman Professorship (1814), .	16,015.81
460.82	John W. Quinby (1888), . . . .	462.95
1,000.00	Abby Crocker Richmond (1881),	1,000.00
1,000.00	John L. Russell (1890), . . . .	1,000.00
10,000.00	William B. Spooner (1890), . .	10,000.00
40,000.00	Thomas Tileston of New York Endowment (1879), . . . . .	40,000.00
5,250.00	Mary P. Townsend (1861), . .	5,250.00
2,100.00	Winthrop Ward (1862), . . . .	2,100.00
53,845.78	Winn Professorship (1877), . . .	54,845.78

## SCHOLARSHIP AND BENEFICIARY FUNDS.

18,038.78	Abner W. Buttrick (1880), . . .	18,069.65
5,469.11	Thomas Cary (1820), . . . . .	5,491.62
2,673.96	George Chapman (1834), . . . .	2,702.31
4,398.31	Joshua Clapp (1839), . . . . .	4,429.41
14,831.39	Jackson Foundation (1885), . . .	14,849.94
5,295.84	J. Henry Kendall (1863), . . . .	5,350.05
3,407.88	Nancy Kendall (1846), . . . . .	3,481.46
1,050.00	William Pomroy (1885), . . . .	1,050.00
		547,881.88
\$6,565,565.63 . . . Amounts carried forward, . . . . .		\$6,322,988.89

Principal, Aug. 1, 1901.		Principal, July 31, 1902.
\$6,565,565.63	.. Amounts brought forward, . . . . .	\$6,322,938.89

## LAW SCHOOL FUNDS.

163,400.89	Law School (balance), . . . . .	\$205,360.56	
3,977.33	James Barr Ames Prize (1898), . . . . .	4,150.62	
65,687.49	Bemis Professorship (1879), . . . . .	65,840.47	
23,979.82	Bussey " (1862), . . . . .	23,979.82	
15,750.00	Dane " (1829), . . . . .	15,750.00	
47,021.25	Law School Book (1882), . . . . .	47,021.25	
100,000.00	Law School Library (1898), . . . . .	100,000.00	
8,340.81	Royall Professorship (1781), . . . . .	8,340.81	
1,266.95	Scholarship money returned (balance), . . . . .	1,327.77	
94,994.97	Weld Professorship (1882), . . . . .	94,994.97	566,766.37

## LAWRENCE SCIENTIFIC SCHOOL FUNDS.

	Edward Austin Loans repaid, . . . . .	\$101.40	
30,686.85	John B. Barringer (1873), . . . . .	30,686.85	
5,684.09	George A. Gardner (1892), . . . . .	5,592.83	
10,507.17	Hennen Jennings Scholarship (1898), . . . . .	10,611.50	
61,536.43	Abbott Lawrence (1859), . . . . .	61,536.43	
50,375.00	James Lawrence (1865), . . . . .	50,375.00	
	Lawrence Scientific School Loans repaid, . . . . .	33.00	
40,805.73	Professorship of Engineering (1847), . . . . .	40,805.73	
25,000.00	Arthur Rotch (1895), . . . . .	25,000.00	
5,109.47	Stuart Wadsworth Wheeler (1898), . . . . .	5,304.70	330,047.44

## MUSEUM OF COMPARATIVE ZOOLOGY FUNDS.

81,745.35	Museum of Comparative Zoölogy (bal.), . . . . .	\$34,370.78	
297,933.10	Agassiz Memorial (1875), . . . . .	297,933.10	
7,594.01	Teachers' and Pupils' (1875), . . . . .	7,594.01	
5,576.87	Virginia Barret Gibbs Scholarship (1892), . . . . .	5,511.23	
50,000.00	Gray Fund for Zoölogical Museum (1859), . . . . .	50,000.00	
108,359.56	Sturgis Hooper (1865), . . . . .	108,467.36	
7,740.66	Humboldt (1869), . . . . .	7,740.66	
5,000.00	Willard Peele Hunnewell (1901), . . . . .	5,000.00	
117,469.34	Permanent (1859), . . . . .	117,469.34	634,086.48

## PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY AND ETHNOLOGY FUNDS.

11,348.39	Hemenway Fellowship (1891), . . . . .	\$11,468.09	
28,355.56	Peabody Building (1866), . . . . .	28,355.56	
47,335.10	Peabody Collection (1866), . . . . .	47,335.10	
47,535.39	Peabody Professor (1866), . . . . .	47,563.51	
30,165.30	Thaw Fellowship (1890), . . . . .	30,175.49	
<u>\$8,115,848.51</u>	.. Amounts carried forward, . . . . .	<u>\$164,897.75</u>	<u>\$7,753,839.08</u>



<u>Principal, Aug. 1, 1901.</u>		<u>Principal, July 31, 1902.</u>
\$8,115,848.51	. . . Amounts brought forward, . . .	\$164,897.75 \$7,758,839.08
10,300.58	<b>Henry C. Warren</b> Exploration (1899), . . . . .	10,795.08
	<b>Susan Cornelia Warren</b> (1902),	5,000.00
5,307.34	<b>Robert C. Winthrop</b> Scholarship (1895), . . . . .	5,362.08
20,061.25	<b>Huntington Frothingham Wolcott</b> (1891), . . . . .	21,024.18
		207,079.04

## MEDICAL SCHOOL FUNDS.

64,397.93	Medical School (balance), . . . . .	\$60,042.31
10,855.97	<b>Edward Austin</b> (Bacteriological Laboratory) (1899), . . . . .	11,075.58
25,512.68	<b>Edward M. Barringer</b> (1881), .	25,512.68
6,162.99	<b>J. Ingersoll Bowditch</b> (1889), .	6,246.61
3,033.02	<b>Boylston</b> Fund for Medical Books (1800), . . . . .	2,768.71
19,465.59	<b>John B. &amp; Buckminster Brown</b> Professorship (1896), . . . . .	20,399.96
92,912.09	<b>Caroline Brewer Croft</b> (1899),	92,025.00
377,698.69	<b>Calvin and Lucy Ellis</b> (1899), .	378,550.19
101,338.02	<b>George Fabyan</b> (1896), . . . . .	101,702.24
1,836.08	<b>Samuel E. Fitz</b> (1884), . . . . .	1,836.08
1,019.60	<b>F. B. Greenough</b> (Surgical Re- search) (1901), . . . . .	2,116.56
19,192.65	<b>Jackson</b> Medical (1859), . . . . .	19,192.65
1,604.12	Medical Library (1872), . . . . .	1,681.11
52,900.33	<b>William O. Moseley</b> (1897), . .	52,900.33
38,750.00	New Subscription (1888), . . . . .	38,750.00
9,335.94	<b>Dr. Rupper</b> (1897), . . . . .	9,335.94
50,000.00	<b>Geo. C. Shattuck</b> (1853), . . . . .	50,000.00
6,069.08	Surgical Laboratory (1897), . . . . .	5,918.66
15,765.11	<b>Mary W. Swett</b> (1884), . . . . .	15,765.11
20,000.00	<b>Samuel W. Swett</b> (1884), . . . . .	20,000.00
2,000.00	<b>Quincy Tufts</b> (1879), . . . . .	2,000.00
14,340.55	<b>Warren</b> Fund for Anatomical Mu- seum (1848), . . . . .	14,359.37
41,279.10	<b>Charles Wilder</b> (1900), . . . . .	41,920.00
33,331.51	<b>Henry Willard Williams</b> (1893),	33,681.45
1,882.08	Gifts for Pathological Dep't Library (balance), . . . . .	1,455.77
1,087.41	Sundry Gifts (unexpended balances),	1,482.23

## FELLOWSHIP FUNDS.

5,292.10	<b>Geo. Cheyne Shattuck</b> Memorial (1891), . . . . .	5,321.12
5,664.73	<b>Charles Eliot Ware</b> Memorial (1891), . . . . .	5,621.65
5,253.00	<b>John Ware</b> Memorial (1891), . .	5,280.14
\$9,179,498.05	. . . Amounts carried forward, . . .	\$1,026,941.45 \$7,960,918.12

<u>Principal, Aug. 1, 1901.</u>		<u>Principal, July 31, 1902.</u>
\$9,179,498.05	. . . Amounts brought forward, . . .	\$1,026,941.45 \$7,960,918.12

## SCHOLARSHIP FUNDS.

5,025.22	Lucius F. Billings (1900), . . .	5,146.42	
5,709.03	D. W. Cheever (1889), . . . . .	5,833.06	
3,089.19	Cotting Gift (1900), . . . . .	3,162.46	
2,765.80	Orlando W. Doe (1893), . . . . .	2,758.57	
60.42	John Foster income for Medical Students (balance), . . . . .	152.63	
5,817.63	Lewis and Harriet Hayden (1894),	5,743.91	
6,365.11	C. M. Jones (1893), . . . . .	6,320.63	
5,233.70	Alfred Hosmer Linder (1895),	5,284.93	
5,519.54	Charles B. Porter (1897), . . . . .	5,504.50	
4,406.25	Charles Pratt Strong (1894), . . .	4,557.74	
6,294.40	Isaac Sweetser (1892), . . . . .	6,346.51	
5,231.87	John Thompson Taylor (1899),	5,283.01	
5,254.11	Edward Wigglesworth (1897), . . .	5,306.30	

## PRIZE FUNDS.

3,527.45	Boylston (1803), . . . . .	3,540.50	
6,209.65	William H. Thorndike (1895),	6,507.73	1,098,890.35

## MEDICAL SCHOOL UNDERTAKING FUNDS.

	Robert C. Billings (1900), . . . . .	\$98,610.00	
	George Higginson Professorship (1902), . . . . .	101,322.02	
	Jackson Professorship (addition of 1902), . . . . .	12,500.00	
	Henry L. Pierce (1898), . . . . .	354,200.00	
	John D. Rockefeller Gift (1902),	312,463.29	
	David Sears (1902), . . . . .	25,300.00	
	Shattuck Professorship (addition of 1902), . . . . .	13,500.00	
	School of Comparative Medicine (1899),	4,431.98	
	Gift for Pathological Laboratory, . .	4,968.79	
	Gift for buildings, . . . . .	1,011.73	923,307.81

## DENTAL SCHOOL FUNDS.

37,370.04	Dental School (balance), . . . . .	\$32,024.51	
2,255.85	Dental School Endowment (1880), . .	2,255.85	
23,000.00	Henry C. Warren Endowment (1889),	23,000.00	
18,913.30	Gifts for Building (1892), . . . . .	19,872.32	77,152.68

## OBSERVATORY FUNDS.

2,792.80	Observatory (balance), . . . . .		
50,088.55	Advancement of Astron. Science (1901),	\$50,380.51	
	Advancement of Astron. Science (1902),	20,054.91	
\$9,884,427.96	. . . Amounts carried forward, . . .	\$70,435.42	\$10,059,768.96

<u>Principal, Aug. 1, 1901.</u>		<u>Principal, July 31, 1902.</u>	
\$9,384,427.96	. . . Amounts brought forward, . . .	\$70,435.42	\$10,059,768.96
	Anonymous Gift (1902), . . . . .	16,996.96	
5,000.00	Thomas G. Appleton (1884), . . . . .	5,000.00	
2,500.00	J. Ingersoll Bowditch (1889), . . . . .	2,500.00	
198,965.70	Uriah A. Boyden (1887), . . . . .	200,000.00	
94.66	Bruce Gift (balance), . . . . .		
299.39	Draper Memorial (balance), . . . . .		
2,000.00	Charlotte Harris (1877), . . . . .	2,000.00	
45,000.00	Haven (1898), . . . . .	45,000.00	
21,000.00	James Hayward (1866), . . . . .	21,000.00	
50,000.00	Observatory Endowment (1882), . . . . .	50,000.00	
50,000.00	Paine Professorship (1886), . . . . .	50,000.00	
273,557.86	Robert Treat Paine (1886), . . . . .	273,557.86	
110,293.88	Edward B. Phillips (1849), . . . . .	110,293.88	
11,713.14	Josiah Quincy (1866), . . . . .	12,275.36	
35,665.61	David Sears (1845), . . . . .	36,521.60	
13,380.00	Augustus Story (1871), . . . . .	13,380.00	
	Gift for publishing lunar photographs, . . . . .	300.00	909,261.08

## BUSSEY INSTITUTION FUNDS.

27,189.93	Bussey Institution (balance), . . . . .	\$26,841.11	
10,588.34	Woodland Hill (1895), . . . . .	10,079.85	36,920.96

## ARNOLD ARBORETUM FUNDS.

71,795.00	Arnold Arboretum (1899), . . . . .	\$116,555.00	
158,947.80	James Arnold (1872), . . . . .	159,329.27	
16,155.04	Arboretum Construction Gifts (bal.), . . . . .	14,761.12	
22,261.93	William L. Bradley (1897), . . . . .	22,110.30	812,755.69

## OTHER FUNDS FOR SPECIAL PURPOSES.

471,109.26	Edward Austin (1899), . . . . .	\$475,917.18	
50,000.00	Bright Legacy (1880), . . . . .	50,000.00	
10,506.66	Phillips Brooks House Endowment (1901), . . . . .	10,506.66	
38,747.12	Bursar's Sundry Accounts (balance), . . . . .	30,351.79	
892,710.18	Bussey Trust (1861), . . . . .	392,710.18	
1,207.52	Fund of the Class of 1834 (1887), . . . . .	1,257.50	
7,078.64	“ “ “ 1844 (1896), . . . . .	7,366.43	
3,725.00	“ “ “ 1853 (1887), . . . . .	3,725.00	
158,786.55	Calvin and Lucy Ellis Aid (1899), . . . . .	159,099.72	
	Fogg Museum of Art (balance), . . . . .	642.90	
50,000.00	William Hayes Fogg (1892), . . . . .	50,000.00	
3,171.50	John Foster (1840), . . . . .	3,171.50	
5,084.55	Free Bed Fund of the Class of 1868 (1898), . . . . .	5,328.63	
\$11,702,913.22	. . . Amounts carried forward, . . .	\$1,190,077.49	\$11,818,706.69

Principal, Aug. 1, 1901.		Principal, July 31, 1902.
\$11,702,913.22	. . . Amounts brought forward, . . .	\$1,190,077.49 \$11,318,706.69
514.66	Free Bed Fund for Stillman Infirmary (1900), . . . . .	539.38
185,458.08	Gains and Losses for General Investments (1891), . . . . .	488,748.07
16,938.58	Gray Fund for Engravings (1858),	17,054.32
719,291.31	Price Greenleaf (1887), . . . . .	788,865.31
29,939.33	Henry Harris (1888), . . . . .	29,939.33
1,259.78	Harvard Memorial Society (1898),	1,320.26
48,237.44	Robert Troup Paine (1880), . .	49,624.76
15,979.01	William M. Prichard (1898), .	16,178.98
32,884.76	John Witt Randall (1892), . . .	32,860.02
5,345.53	John W. and Belinda L. Randall (1897), . . . . .	5,402.14
42,000.00	James Savage (1873), . . . . .	42,000.00
4,322.40	School of Comparative Medicine (1899) (transferred to Med. Sch. Undertaking), . . . . .	
10,147.91	Ralph H. Shepard (1900), . . .	10,596.32
5,897.78	Ralph H. Shepard Memorial (1898),	5,897.78
2,524.49	Henry P. Walcott (1901), . . .	2,645.84
2,331.00	Gifts for Cuban Teachers, . . . . .	526.63
5,166.38	Gift for Path. Lab. (Vet. Sch.) (transferred to Med. Sch. Undertaking),	
5,047.77	Gifts for Additions to The Soldier's Field (1898), . . . . .	5,148.73
	Gifts for Improvements and Additions to The Soldier's Field (1901), . .	59,682.18
55,916.69	Architecture Building, (balance),	
517.91	Brighton Marsh Fence, " "	421.74
	Philosophy Building Gifts, " "	2,117.58
80,668.06	Pierce Hall, " "	
36,251.87	Semitic Building, " "	8,421.91
1,627.32	John Simpkins Hall, " "	3,032.00
33,111.49	Stillman Infirmary, " "	9,857.70
43,171.59	University Museum Building, " "	3,438.44
10,096.11	F. L. Higginson's Gift (The Harvard Union), . . . . .	
1,318.20	Sundry balances, . . . . .	2,774,396.71

FUNDS IN TRUST FOR PURPOSES NOT  
CONNECTED WITH THE COLLEGE.

16,370.09	Daniel Williams (1716), . . . . .	\$16,643.61	
4,789.85	Sarah Winslow (1790), . . . . .	4,794.84	21,438.45
<u>\$13,119,583.61</u>			<u>\$14,114,541.85</u>

*Changes in the Funds during the year ending July 31, 1902.*

Total amount of Funds and balances, July 31, 1902,			
as before stated, . . . . .	\$14,114,541.85		
Total amount of Funds and balances, August 1, 1901,			
as before stated, . . . . .	13,119,538.61		
Showing a total increase during the year of . . . . .			<u>\$995,003.24</u>

Which is made up as follows :—

Gifts forming new Funds or increasing old ones, . .	\$727,845.58		
Increase of Funds established during the year, . .	11,219.46		
Credit balances created, . . . . .	84,170.84		
Gain from change of investments, . . . . .	386,065.59		
	<u>\$1,209,300.97</u>		

Deduct from this amount

Sundry balances used up, . . . . .	\$151,912.26		
Loss from change of investments, . . . . .	1,190.95		
Decrease more than increase of Funds and balances, which appear both at the beginning and end of the year, . . . . .	61,194.52	214,297.73	<u>\$995,003.24</u>

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Net increase of Funds and balances as above, . . .	\$481,455.89		
Less decrease as above, . . . . .	214,297.73		

Leaving amount of the net increase of the Funds and balances, excluding gifts for capital ac- count, . . . . .	\$267,157.66		
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The following tables are not found, in their present form, in the Treasurer's books. They are intended to exhibit with some detail the resources and the expenditures of each department of the University. Gifts for capital account, gifts for immediate use and the income of every Fund held by the University are given in these tables, and also the sum paid out for the specific object of each and every Fund, in case that sum be either less or more than the actual income of the Fund. If the object to which the income of a Fund is to be applied be a general one, — like salaries, for example, — no separate mention is made in these tables of that appropriation. That particular payment is merged with others of the same kind under the general heading. A balanced summary of these tables will be found on page 98.

## TABLE NO. I.

## THE UNIVERSITY.

## RECEIPTS.

## Gifts for capital account.

Robert Henry Eddy Fund (additional), . . .	\$11,500.00	
Henry L. Pierce Residuary Bequest " . . .	3,000.00	
Henry Villard Fund, . . . . .	50,000.00	\$64,500.00

## Income of the following Funds:—

Andrew Bigelow, . . . . .	\$287.60	
Robert C. Billings (part), . . . . .	3,030.00	
Stanton Blake, . . . . .	240.00	
Charlotte F. Blanchard, . . . . .	229.01	
Samuel D. Bradford, . . . . .	252.00	
John W. Carter, . . . . .	600.00	
Thomas Cotton, . . . . .	7.44	
John Cowdin, . . . . .	2,023.22	
George B. Dorr, . . . . .	5,553.35	
George Draper, . . . . .	2,325.17	
Robert H. Eddy, . . . . .	2,504.98	
Harvard Ellis, . . . . .	4,858.80	
Gore, . . . . .	987.41	
John C. Gray, . . . . .	1,197.19	
Henry Harris ( $\frac{1}{2}$ income), . . . . .	718.53	
Walter Hastings, . . . . .	1,310.14	
George Baxter Hyde, . . . . .	240.00	
Insurance and Guaranty, . . . . .	6,334.96	
Leonard Jarvis, . . . . .	809.86	
Henry P. Kidder, . . . . .	480.00	
Joseph Lee, . . . . .	478.88	
Theodore Lyman, . . . . .	480.00	
Israel Munson, . . . . .	756.00	
Francis E. Parker, . . . . .	5,450.44	
William Perkins, . . . . .	1,440.00	
Amounts carried forward, . . . . .	\$42,544.98	\$64,500.00

TABLE NO. I, THE UNIVERSITY, CONTINUED.

## RECEIPTS.

Amounts brought forward, . . . . .	\$42,544.98	\$64,500.00
<b>Income of the following Funds (continued):—</b>		
Henry L. Pierce Residuary (part), . . . . .	14,118.29	
President's, . . . . .	3,052.99	
Retiring Allowance, . . . . .	17,386.16	
John L. Russell, . . . . .	1,121.76	
Isaac Sweetser, . . . . .	2,251.88	
Seth Turner, . . . . .	240.00	
Henry Villard, . . . . .	1,400.02	
William F. Weld, . . . . .	4,788.75	86,854.78
<b>Balance remaining after dividing the net income among the Funds, . . . . .</b>		
Care of the Sarah Winslow Fund, . . . . .	5.75	
Sale of catalogues, calendars, directories, &c., . . . . .	973.68	
“ shrubs, . . . . .	81.20	
“ shelving, . . . . .	12.00	
Use of houses by College officers, . . . . .	1,500.00	
Insurance premiums on Memorial Hall, repaid, \$1,500.48		
Less “ “ “ paid, . . . . .	510.17	990.31
Taxes on Harvard Union, repaid, . . . . .	3,380.00	7,248.80
<b>William Hayes Fogg Art Museum.</b>		
Income of William Hayes Fogg Fund, . . . . .	\$2,400.00	
“ Gray Fund for Engravings, . . . . .	\$813.07	
Sale of catalogues, . . . . .	5.00	818.07
Income of William M. Prichard Fund, . . . . .	766.99	
“ John Witt Randall Fund, . . . . .	1,554.48	
Repayment, . . . . .	73.50	
Sale of photographs, . . . . .	15.65	
Receipt for expenses on loaned collections, . . . . .	510.28	6,188.97
<b>Phillips Brooks House.</b>		
Income of Endowment, . . . . .	\$504.34	
“ Ralph H. Shepard Fund, . . . . .	487.10	
“ Ralph Hamilton Shepard Memorial Fund, . . . . .	283.10	1,274.54
		<u>\$166,012.09</u>
<b>PAYMENTS.</b>		
<b>Overseers' Expenses.</b>		
Printing President's Annual Report, . . . . .	\$972.56	
“ Treasurer's “ “ . . . . .	293.06	
“ other reports, ballots, etc., . . . . .	139.62	
Advertising, . . . . .	247.65	
Auditing Treasurer's accounts, . . . . .	150.00	
Other expenses, . . . . .	35.94	\$1,838.83
Amount carried forward, . . . . .		<u>\$1,838.88</u>

TABLE NO. I, THE UNIVERSITY, CONTINUED.

## PAYMENTS.

	Amount brought forward, . . . . .		\$1,888.83
<b>Office Expenses.</b>			
<b>President's,</b>			
	Clerical services, . . . . .	\$840.92	
	Other expenses, . . . . .	<u>287.63</u>	\$1,078.55
<b>Treasurer's,</b>			
	Clerical services, . . . . .	\$905.95	
	Rent of safes, . . . . .	700.00	
	Other expenses, . . . . .	<u>828.47</u>	2,329.42
<b>Bursar's,</b>			
	Clerical services, . . . . .	\$3,449.75	
	Other expenses, . . . . .	<u>1,461.87</u>	4,911.62
<b>Publication Agent's,</b>			
	Clerical services, . . . . .	\$1,313.32	
	Other expenses, . . . . .	<u>2,733.33</u>	4,046.65
<b>Inspector of Grounds and Buildings',</b>			
	Clerical services, . . . . .	\$852.81	
	Other expenses, . . . . .	<u>283.81</u>	1,136.12
	Janitor's, . . . . .		28.81
	Corporation Rooms (fuel, rent, &c.), . . . . .		<u>2,524.30</u>
			16,050.47
<b>Salaries.</b>			
<b>President,</b>			
	From the University, . . . . .	\$6,000.00	
	" President's Fund, . . . . .	2,985.20	
	" Thomas Cotton Fund, . . . . .	<u>7.29</u>	\$8,992.49
	Treasurer, . . . . .		6,000.00
	Comptroller, . . . . .		5,000.00
	Bursar, . . . . .		4,000.00
	Assistant Bursar, . . . . .		2,000.00
	Corresponding Secretary, . . . . .		2,041.67
	Recording Secretary, . . . . .		1,666.67
	Secretary of the Board of Overseers, . . . . .		200.00
	Publication Agent, . . . . .		2,000.00
	Clerks, Treasurer's office, . . . . .		3,800.00
	Bursar's Assistant, . . . . .		1,700.00
	Superintendent of Buildings, . . . . .		2,000.00
	Secretary to the President, . . . . .		<u>2,000.00</u>
			41,400.83
	Retiring Allowances, . . . . .		14,147.00
<b>Memorial Hall and Sanders Theatre.</b>			
	Repairs, . . . . .	\$288.82	
	Fuel, lighting, furniture, cleaning, &c., . . . . .	451.11	739.93
	Amount carried forward, . . . . .		<u>\$74,177.06</u>



TABLE NO. I, THE UNIVERSITY, CONTINUED.

## PAYMENTS.

Amount brought forward, . . . . .			\$74,177.06
<b>General Expenses.</b>			
Repairs and improvements, . . . . .	\$4,919.46		
Janitors and cleaning, . . . . .	53.00		
Labor, . . . . .	5,690.62		
Commencement Day expenses, . . . . .	506.02		
Commencement Programme, . . . . .	91.20		
Annual Catalogue, . . . . .	2,502.68		
Calendar, . . . . .	181.64		
Guide Book, . . . . .	108.99		
Advertising, . . . . .	554.28		
Insurance, . . . . .	37.50		
Watchmen, . . . . .	2,316.43		
Taxes on Harvard Union, . . . . .	3,380.00		
Freight, supplies, and sundries, . . . . .	754.30		
Legal services and expenses, . . . . .	10.00		
Buffalo Exposition expenses, . . . . .	30.90		
Paris Exposition expenses, . . . . .	26.00		
Street-watering assessments, . . . . .	274.80		
Plank walks, . . . . .	497.00		
Mercantile agency, . . . . .	925.00		
Surveys and plans, . . . . .	45.00		
Driveways and gravel walks, . . . . .	1,262.57		
Vaccinating employés, . . . . .	114.00		
Receptions, . . . . .	1,245.22		
Payments made from University income on account of William Hayes Fogg Art Museum, . . .	3,039.74		
Payments made from University income on account of Phillips Brooks House, . . . . .	1,996.32		
Deficit in the School of Veterinary Medicine for 1901-02, . . . . .	1,847.66		
Part of the debt of the School of Veterinary Medicine, . . . . .	10,291.11	42,701.44	
<b>William Hayes Fogg Art Museum.</b>			
Payments of \$3,039.74, made from University income on account of expenses for 1901-02, as above stated, and payments from the income of Funds as follows:—			
<b>William Hayes Fogg, Director, . . . . .</b>	<b>\$500.00</b>		
Collections and expenses, . . . . .	1,856.53	\$2,356.53	
<b>William M. Prichard, collections, . . . . .</b>		567.02	
<b>John Witt Randall, Curator, . . . . .</b>	<b>\$250.00</b>		
Collections and expenses, . . . . .	829.22	1,079.22	
<b>Gray Fund for Engravings, Curator, . . . . .</b>	<b>\$250.00</b>		
Collections and expenses, . . . . .	452.33	702.33	4,705.10
Amount carried forward, . . . . .			\$121,583.60

## TABLE NO. I, THE UNIVERSITY, CONTINUED.

## PAYMENTS.

Amount brought forward, . . . . .		\$121,583.60	
<b>Phillips Brooks House.</b>			
Payments of \$1,996.32, made from University income on account of expenses for 1901-02, as above stated, and payments for furniture, receptions, &c., from the income of Funds as follows:			
Phillips Brooks House Endowment, . . . .	\$504.84		
Ralph H. Shepard, . . . . .	88.69		
Ralph Hamilton Shepard Memorial, . . . .	288.10	826.13	
			\$122,409.73

TABLE NO. II.  
THE COLLEGE.

## RECEIPTS.

Gifts for Capital Account.			
Bowdoin Prize Fund for Dissertations (additional),	\$15,000.00		
Class Subscription Fund (additional), . . . . .	147.50		
T. Jefferson Coolidge Fund for Research in Physics, . . . . .	57,500.00		
John Appleton Haven Scholarship Fund, . . . .	10,000.00		
C. L. Jones Scholarship Fund, . . . . .	80,000.00		
Lowell Fund for a Botanic Garden (additional), .	25.00		
Charles Eliot Norton Fellowship Fund, . . . .	14,100.00		
Scholarship of the Class of 1841 Fund (additional),	1,000.00		
“ “ 1877 “ . . . . .	5,000.00	\$132,772.50	
Income of Funds for Instruction, and Gifts for Salaries.			
Alford Professorship, . . . . .	\$1,331.95		
John B. Barringer, . . . . .	1,472.98		
Boylston Professorship, . . . . .	1,360.18		
Class Subscription, . . . . .	7,214.88		
Paul Dudley, . . . . .	160.32		
Eliot Professorship, . . . . .	1,037.71		
Eliot “ (Jon. Phillips' Gift), . . . .	350.00		
Calvin and Lucy Ellis Aid (part), . . . . .	4,996.89		
Erving Professorship, . . . . .	168.00		
Fisher “ . . . . .	1,727.57		
Henry Flynt, . . . . .	18.05		
Fund for Permanent Tutors, . . . . .	779.52		
Gospel Church ( $\frac{1}{2}$ income), . . . . .	148.22		
Asa Gray Professorship, . . . . .	1,036.75		
Gurney (part), . . . . .	8,333.89		
Hersey Professorship ( $\frac{2}{3}$ income), . . . . .	582.25		
Hollis “ (Divinity), . . . . .	1,656.86		
Hollis “ (Mathematics), . . . . .	179.86		
Amounts carried forward, . . . . .	\$32,555.88	\$132,772.50	

## TABLE NO. II, THE COLLEGE, CONTINUED.

## RECEIPTS.

Amounts brought forward, . . . . . \$32,555.88 \$132,772.50

Income of Funds for Instruction, and Gifts for Salaries  
(continued).

Ingersoll Lecture (part), . . . . .	221.74	
Abbott Lawrence, . . . . .	2,953.73	
James Lawrence, . . . . .	2,418.00	
Lectures on Political Economy, . . . . .	461.23	
Henry Lee Professorship, . . . . .	5,011.97	
Thos. Lee, for Hersey Professorship, . . . . .	1,043.71	
Thos. Lee, for Reading, . . . . .	758.28	
McLean Professorship, . . . . .	2,067.02	
William Belden Noble Lectures (part), . . . . .	943.17	
Daniel H. Peirce, . . . . .	671.81	
Perkins Professorship, . . . . .	1,008.00	
Plummer " . . . . .	1,200.96	
Pope " . . . . .	2,520.00	
Professorship of Engineering, . . . . .	1,958.69	
" " Hygiene (part), . . . . .	6,732.98	
Nelson Robinson, Jr. (part), . . . . .	5,850.00	
Arthur Botch, . . . . .	1,200.00	
Rumford Professorship, . . . . .	2,709.17	
Gurdon Saltonstall, . . . . .	2,880.00	
Smith Professorship, . . . . .	1,110.72	
Josiah Stickney, . . . . .	614.93	
Unknown Memorial (part), . . . . .	3,086.06	
Henry C. Warren (part), . . . . .	1,100.00	
Sylvester Waterhouse (part), . . . . .	149.36	
Gifts for salaries and lectures, . . . . .	131.17	81,358.56

Income of Fellowship Funds, and Gifts for Fellowships.

Edward Austin (part), . . . . .	\$11,916.66	
Ozias Goodwin Memorial, . . . . .	531.74	
Harris, . . . . .	519.26	
John Thornton Kirkland, . . . . .	510.82	
Henry Lee Memorial, . . . . .	549.17	
Charles Eliot Norton. Interest, . . . . .	\$300.00	
Gift, . . . . .	300.00	600.00
Robert Treat Paine, . . . . .		602.59
John Parker. Interest, . . . . .	\$2,661.46	
Repayment, . . . . .	175.00	2,836.46
Rogers, . . . . .		1,530.19
Henry Bromfield Rogers Memorial, . . . . .		542.26
South End House (gifts), . . . . .		325.00
John Tyndall, . . . . .		557.95
James Walker, . . . . .		545.04
Whiting, . . . . .		1,078.42
Amount carried forward, . . . . .		\$22,645.56
		\$236,776.62

## TABLE NO. II, THE COLLEGE, CONTINUED.

## RECEIPTS.

Amount brought forward, . . . . .	\$236,776.63
<b>Income of Scholarship Funds, and Gifts for Scholarships.</b>	
Abbot, . . . . .	\$177.50
Alford (accumulating), . . . . .	86.54
Edward Austin (part) for Teachers, . . . . .	1,750.00
Bartlett, . . . . .	261.55
Bassett, . . . . .	273.55
Bigelow, . . . . .	616.46
Samuel A. Borden (accumulating), . . . . .	100.75
Bowditch, . . . . .	5,405.81
Bright, . . . . .	1,303.87
Browne, . . . . .	180.14
Morey Willard Buckminster, . . . . .	245.62
Burr, . . . . .	1,556.21
Ruluff Sterling Choate, . . . . .	292.37
Class of 1802, . . . . .	394.32
“ 1814, . . . . .	150.53
“ 1815 (Kirkland), . . . . .	307.82
“ 1817, . . . . .	213.28
“ 1828, . . . . .	166.03
“ 1835, . . . . .	230.45
“ 1841, . . . . .	218.35
“ 1852 (Dana), . . . . .	244.27
“ 1856, . . . . .	737.86
“ 1867, . . . . .	221.90
“ 1877, . . . . .	30.00
“ 1883, . . . . .	262.00
Crowninshield, . . . . .	563.52
Warren H. Cudworth (gift), . . . . .	600.00
Francis H. Cummings, . . . . .	257.66
George and Martha Derby, . . . . .	264.77
Julius Dexter, . . . . .	238.32
Orlando W. Doe, . . . . .	130.85
William Samuel Eliot, . . . . .	262.46
Joseph Eveleth (part), . . . . .	1,815.49
Fall River, . . . . .	101.04
Farrar, . . . . .	296.11
Richard Augustine Gambrill, . . . . .	536.11
Charles Haven Goodwin, . . . . .	338.06
Benjamin D. Greene, . . . . .	198.86
Price Greenleaf, . . . . .	3,000.00
John Appleton Haven, . . . . .	20.02
William Hilton (part), . . . . .	664.18
Ebenezer Rockwood Hoar, . . . . .	503.28
Amounts carried forward, . . . . .	\$24,717.91 \$236,776.63

## TABLE NO. II, THE COLLEGE, CONTINUED.

## RECEIPTS.

Amounts brought forward, . . . . . \$24,717.91 \$286,776.62

## Income of Scholarship Funds, and Gifts for Scholarships

(continued).

Levina Hoar, for the town of Lincoln, . . . . .	297.65	
Hodges (part), . . . . .	279.59	
Hollis, . . . . .	292.46	
Henry B. Humphrey, . . . . .	512.98	
Hennen Jennings, . . . . .	504.33	
C. L. Jones, . . . . .	1,440.00	
George Emerson Lowell, . . . . .	491.18	
Matthews ( $\frac{1}{2}$ net rents of Hall), . . . . .	5,156.87	
William Merrick, . . . . .	289.25	
Morey, . . . . .	391.92	
Lady Mowlson, . . . . .	271.63	
Howard Gardner Nichols, . . . . .	268.38	
Lucy Osgood (accumulating), . . . . .	240.58	
Pennyoy, . . . . .	220.83	
Perkins, . . . . .	201.74	
Wendell Phillips, . . . . .	71.33	
Ricardo Prize (gift), . . . . .	350.00	
Rodger, . . . . .	62.06	
Henry Bromfield Rogers, . . . . .	165.98	
Edward Russell, . . . . .	267.65	
Sales, . . . . .	260.11	
Saltonstall, . . . . .	515.14	
Leverett Saltonstall, . . . . .	397.25	
Mary Saltonstall, . . . . .	330.72	
Savage, . . . . .	300.00	
Sever, . . . . .	155.23	
Sewall, . . . . .	518.26	
Shattuck, . . . . .	2,326.22	
Slade, . . . . .	286.03	
Story, . . . . .	210.24	
Stoughton, . . . . .	65.76	
Swift, . . . . .	104.79	
Thayer, . . . . .	3,702.67	
Gorham Thomas, . . . . .	197.42	
Toppan, . . . . .	361.15	
Townsend, . . . . .	1,203.98	
Walcott, . . . . .	219.60	
Christopher M. Weld, . . . . .	495.89	
Jacob Wendell, . . . . .	250.61	
Whiting, . . . . .	541.83	
Anonymous Gift for Scholarship use, . . . . .	100.00	49,027.22
Amount carried forward, . . . . .		\$285,803.84

## TABLE NO. II, THE COLLEGE, CONTINUED.

## RECEIPTS.

	Amount brought forward, . . . . .		\$285,808.84
<b>Income of Beneficiary Funds, and Repayments.</b>			
	<b>Nathaniel Appleton, . . . . .</b>	\$24.05	
	<b>Edward Austin (part), . . . . .</b>	2,352.82	
	<b>Edward Austin Loans (L. S. S.), repayments, . . . . .</b>	101.40	
	<b>Frank Bolles Memorial, . . . . .</b>	79.34	
	<b>William Brattle, . . . . .</b>	65.90	
	<b>Thomas Danforth, . . . . .</b>	42.91	
	<b>Moses Day, . . . . .</b>	261.55	
	<b>Calvin and Lucy Ellis Aid (part), . . . . .</b>	953.32	
	<b>John Ellery, . . . . .</b>	17.18	
	<b>Exhibitions, . . . . .</b>	63.99	
	<b>Thomas Fitch, . . . . .</b>	32.21	
	<b>Ephraim Flynt, . . . . .</b>	18.53	
	<b>Henry Flynt, . . . . .</b>	6.43	
	<b>Henry Gibbs, . . . . .</b>	19.25	
	<b>John Glover, . . . . .</b>	127.44	
	<b>Price Greenleaf Aid (balance), . . . . .</b>	15,658.66	
	<b>Edward Holyoke, . . . . .</b>	15.46	
	<b>Robert Keyne, . . . . .</b>	101.95	
	<b>Lawrence Scientific School Loans, repayments, . . . . .</b>	33.00	
	<b>Mary Lindall, . . . . .</b>	42.19	
	<b>Susan B. Lyman, . . . . .</b>	250.13	
	<b>Anne Mills, . . . . .</b>	9.02	
	<b>Munroe, . . . . .</b>	518.98	
	<b>Palfrey Exhibition, . . . . .</b>	95.62	
	<b>Dr. Andrew P. Peabody Memorial, . . . . .</b>	207.94	
<b>Scholarship and Beneficiary Money Returned.</b>			
	Loans and Scholarships repaid, . . . . .	2,129.34	
	<b>Joseph Sewall, . . . . .</b>	8.59	
	<b>Alexander W. Thayer (part), . . . . .</b>	199.20	
	<b>Quincy Tufts, . . . . .</b>	535.44	
	<b>Benjamin Wadsworth, . . . . .</b>	11.57	
	<b>Samuel Ward (part), . . . . .</b>	141.13	
	<b>Stuart Wadsworth Wheeler.</b>		
	Interest, . . . . .	\$245.23	
	Loan repaid, . . . . .	50.00	295.23
			24,419.77
<b>Income of Prize Funds.</b>			
	<b>James Gordon Bennett, . . . . .</b>	\$65.33	
	<b>Bowdoin Prizes for Dissertations, . . . . .</b>	1,113.65	
	<b>Boylston Prizes for Elocution, . . . . .</b>	173.42	
	<b>Coolidge Debating, . . . . .</b>	247.10	
	<b>Edward Hopkins Gift for "Deturs."</b>		
	From Trustees, . . . . .	\$186.47	
	Interest on unexpended balance, . . . . .	86.26	272.73
	Amounts carried forward, . . . . .	\$1,872.23	\$310,223.61

## TABLE NO. II, THE COLLEGE, CONTINUED.

## RECEIPTS.

Amounts brought forward, . . . . .	\$1,872.28	\$310,228.61
<b>Income of Prize Funds (continued).</b>		
Sales, . . . . .	50.88	
John O. Sargent, . . . . .	120.14	
George B. Sohler (part), . . . . .	250.00	
Charles Sumner, . . . . .	152.69	
Robert N. Toppan, . . . . .	168.48	
Philip Washburn, . . . . .	100.37	
David Ames Wells, . . . . .	<u>2,869.55</u>	5,584.29
<b>Income of Funds for General Purposes.</b>		
J. W. P. Abbot (accumulating), . . . . .	\$409.68	
John A. Blanchard, . . . . .	50.40	
Jonathan Phillips, . . . . .	<u>1,512.00</u>	1,972.08
<b>Income of Sundry Funds for Special Purposes.</b>		
Francis James Child Memorial, . . . . .	\$535.78	
Classical Publication Fund of the Class of 1856,		
Interest, . . . . .	\$341.04	
Sales, . . . . .	<u>388.85</u>	724.39
T. Jefferson Coolidge, for Research in Physics, . . . . .	2,500.00	
John Davis Williams French, . . . . .	243.74	
George A. Gardner, . . . . .	272.83	
Harvard Oriental Series, . . . . .	725.47	
Ingersoll Lecture (part), . . . . .	40.00	
Joseph Lovering, for Physical Research, . . . . .	386.06	
William Belden Noble Lectures.		
Interest (part), . . . . .	\$76.01	
Sales, . . . . .	<u>25.20</u>	101.21
Nelson Robinson, Jr. (part), . . . . .	3,550.00	
George W. Sawin, . . . . .	208.99	
Barthold Schlesinger. Bequest, . . \$2,000.00		
Interest, . . . . .	<u>30.94</u>	2,030.94
John E. Thayer, . . . . .	782.54	
Elizabeth Torrey, . . . . .	59.14	
Henry Warren Torrey. Interest, . . \$513.50		
Sales, . . . . .	<u>202.87</u>	716.37
Unknown Memorial (part), . . . . .	1,800.00	
Samuel Ward (part), . . . . .	664.50	
Cyrus M. Warren, . . . . .	311.43	
Henry C. Warren (part), . . . . .	4,557.90	
Chauncey Wright, . . . . .	<u>47.76</u>	20,259.00
<b>Appleton Chapel.</b>		
Income of Fund for Religious Services, . . . . .	\$49.68	
" Increase Sumner Wheeler Fund, . . . . .	2,400.00	2,449.68
Amount carried forward, . . . . .		<u>\$340,488.61</u>

## TABLE NO. II, THE COLLEGE, CONTINUED.

## RECEIPTS.

Amount brought forward, . . . . .		\$340,488.61	
<b>Jefferson Physical Laboratory.</b>			
Interest on unexpended balance, . . . . .		\$151.49	
Income of Endowment, . . . . .		3,600.00	
Gift for the improvement of ventilation, interest, . . . . .		10.00	3,761.49
<b>Hemenway Gymnasium.</b>			
Use of lockers, . . . . .		\$3,550.00	
“ by graduates and others, . . . . .		109.51	
Sale of dumb-bells, . . . . .		10.00	3,669.51
<b>Botanic Garden and Botanic Museum.</b>			
Income of Botanic Department Fund, . . . . .		\$1,909.44	
“ Lowell Fund, . . . . .		3,186.77	
“ John L. Russell Fund (part), . . . . .		24.00	
“ Gifts for Cases, . . . . .		39.50	
Use of house, . . . . .		700.00	
Gifts for present use, . . . . .		17,382.00	
Sale of botanical material, . . . . .		200.00	
Receipt from Express Co. for broken case, . . . . .		53.00	23,494.71
<b>Gray Herbarium.</b>			
Income of balance, . . . . .		\$16.56	
“ Asa Gray Memorial Fund, . . . . .		1,560.58	
“ Herbarium Fund, . . . . .		991.49	
“ John L. Russell Fund (part), . . . . .		72.00	
Asa Gray's copyrights, . . . . .		1,018.61	
Sale of duplicate books and pamphlets, . . . . .		28.88	
“ publications, . . . . .		52.25	
“ check lists, . . . . .		2.42	
Use of cuts of illustrations, . . . . .		200.00	
Repayment, . . . . .		730.04	
Gifts for present use, . . . . .		5,230.00	9,897.78
<b>Sundry Gifts.</b>			
For Department of The Classics, sales of publications, . . . . .		\$212.34	
For Department of The Classics, for lantern slides, . . . . .		153.44	
“ “ “ Education, . . . . .		800.00	
“ “ “ French, . . . . .		10.63	
“ “ “ Geography (models), sales, . . . . .		45.22	
“ “ “ Physics, . . . . .		400.00	
“ “ “ Sanskrit.			
Interest, . . . . .	\$51.32		
Sales of publications, . . . . .	40.90	92.22	
“ Annals of Mathematics, . . . . .		172.12	
Amounts carried forward, . . . . .		\$1,885.97	\$381,312.10



## TABLE NO. II, THE COLLEGE, CONTINUED.

## RECEIPTS.

Amounts brought forward, . . . . .	\$1,885.97	\$381,312.10
<b>Sundry Gifts (continued).</b>		
<b>For Lowell Memorial Library.</b>		
Gift, . . . . .	\$75.00	
Sale of duplicates, . . . . .	3.60	78.60
" Sugar-cane investigations.		
Interest, . . . . .	\$39.58	
Repayment, . . . . .	1,804.91	1,844.49
" Collections for a Germanic Museum, \$50.00		
Interest, . . . . .	80.90	80.90
" Semitic Collection, interest, . . . . . 756.50		
" " Library, interest, . . . . . 25.44		
" Laboratory of Metallurgical Chemistry.		
Gift, . . . . .	\$3,000.00	
Interest, . . . . .	9.96	3,009.96
" Corinthian Capital, . . . . . 125.00		
" Concert of Danish Music, . . . . . 318.59		
" Present use, unrestricted, . . . . . 800.00		
		<u>8,420.45</u>
<b>Receipts from Students (part).</b>		
Tuition fees, regular courses, . . . . .	\$409,550.00	
" " Summer Schools, . . . . .	18,537.88	
<b>Examination fees.</b>		
Admission, . . . . .	\$5,475.00	
Condition, . . . . .	483.00	
Degree of S. D., . . . . .	80.00	5,988.00
Graduation fees, . . . . .		<u>5,020.00</u>
<b>Laboratory fees.</b>		
Botany, . . . . .	\$1,042.50	
Chemistry, . . . . .	12,689.72	
Engineering, . . . . .	562.50	
Geology, . . . . .	1,007.50	
Hygiene, . . . . .	1,510.00	
Mineralogy, . . . . .	810.00	
Mining and Metallurgy, . . . . .	1,501.25	
Philosophy, . . . . .	155.00	
Physics, . . . . .	3,600.00	
Zoology, . . . . .	867.50	23,745.97
<b>College dormitories, not including receipts from buildings belonging to University Houses and Lands, . . . . . 74,381.48</b>		
Summer Camp, Engineering, . . . . .	5,665.50	
Summer School excursions, . . . . .	5.00	542,893.28
Amount carried forward, . . . . .		<u>\$982,625.83</u>

## TABLE NO. II, THE COLLEGE, CONTINUED.

## RECEIPTS.

	Amount brought forward, . . . . .	\$932,625.83	
<b>Sundries.</b>			
	For use of rooms by College Society, . . . . .	\$1,260.00	
	Sale of tickets to Commencement Dinner, . . . . .	718.00	
	“ hymn books, . . . . .	68.96	
	“ Annals of Mathematics, . . . . .	377.60	
	“ other publications, . . . . .	1,300.88	
	“ old examination papers, . . . . .	400.83	
	“ pasturage at Squam Lake, . . . . .	80.00	
	Loans repaid, . . . . .	110.25	
	Salary repaid, . . . . .	11.00	4,277.53
			<u>\$936,903.35</u>

## PAYMENTS.

<b>From Fellowship Funds and Gifts.</b>			
	Edward Austin, . . . . .	\$3,000.00	
	Edward Austin, Architecture, . . . . .	1,000.00	
	Edward Austin, Teaching, . . . . .	8,916.66	
	Ozias Goodwin Memorial, . . . . .	450.00	
	Harris, . . . . .	500.00	
	John Thornton Kirkland, . . . . .	225.00	
	Henry Lee Memorial, . . . . .	450.00	
	Charles Eliot Norton, . . . . .	900.00	
	Robert Treat Paine, . . . . .	500.00	
	John Parker, . . . . .	1,750.00	
	Rogers, . . . . .	1,450.00	
	Henry Bromfield Rogers Memorial, . . . . .	450.00	
	South End House, . . . . .	600.00	
	John Tyndall, . . . . .	375.00	
	James Walker, . . . . .	500.00	
	Whiting, . . . . .	900.00	\$20,966.66
<b>From Scholarship Funds and Gifts.</b>			
	Abbot, . . . . .	\$150.00	
	Edward Austin for Teachers, . . . . .	1,750.00	
	Bartlett, . . . . .	333.34	
	Bassett, . . . . .	270.00	
	Bigelow, . . . . .	500.00	
	Bowditch, . . . . .	5,041.68	
	Bright, . . . . .	800.02	
	Browne, . . . . .	150.00	
	Morey Willard Buckminster, . . . . .	200.00	
	Burr, . . . . .	1,133.34	
	Ruluff Sterling Choate, . . . . .	275.00	
	Class of 1802, . . . . .	300.00	
	Amounts carried forward, . . . . .	\$10,903.38	\$20,966.66

TABLE NO. II, THE COLLEGE, CONTINUED.

## PAYMENTS.

Amounts brought forward, . . . . .	\$10,908.38	\$20,966.66
From Scholarship Funds and Gifts ( <i>continued</i> ).		
Class of 1814, . . . . .	125.00	
“ 1815 (Kirkland), . . . . .	250.00	
“ 1817, . . . . .	100.00	
“ 1828, . . . . .	150.00	
“ 1835, . . . . .	175.00	
“ 1841, . . . . .	188.34	
“ 1852 (Dana), . . . . .	200.00	
“ 1856, . . . . .	600.00	
“ 1867, . . . . .	175.00	
“ 1883, . . . . .	200.00	
Crowninshield, . . . . .	450.00	
Warren H. Cudworth, . . . . .	600.00	
Francis H. Cummings, . . . . .	200.00	
George and Martha Derby, . . . . .	250.00	
Julius Dexter, . . . . .	233.34	
O. W. Doe, . . . . .	100.00	
William Samuel Eliot, . . . . .	250.00	
Joseph Eveleth, . . . . .	866.67	
Fall River, . . . . .	80.00	
Farrar, . . . . .	166.66	
Richard Augustine Gambrill, . . . . .	425.00	
Charles Haven Goodwin, . . . . .	300.00	
Benjamin D. Greene, . . . . .	150.00	
Price Greenleaf, . . . . .	2,800.00	
Hilton, . . . . .	450.00	
Ebenezer Rockwood Hoar, . . . . .	400.00	
Levina Hoar, for the town of Lincoln, . . . . .	250.00	
Hodges, . . . . .	200.00	
Hollis, . . . . .	225.00	
Henry B. Humphrey, . . . . .	450.00	
Hennen Jennings, . . . . .	400.00	
C. L. Jones, . . . . .	1,200.00	
George Emerson Lowell, . . . . .	400.00	
Matthews, . . . . .	6,100.00	
William Merrick, . . . . .	266.66	
Morey, . . . . .	350.00	
Lady Mowson, . . . . .	200.00	
Howard Gardner Nichols, . . . . .	200.00	
Pennoyer, . . . . .	75.00	
Rebecca A. Perkins, . . . . .	150.00	
Wendell Phillips Memorial, . . . . .	66.66	
Ricardo Prize, . . . . .	350.00	
Rodger, . . . . .	150.00	
Amounts carried forward, . . . . .	\$31,766.71	\$20,966.66

TABLE NO. II, THE COLLEGE, CONTINUED.

## PAYMENTS.

	Amounts brought forward, . . . . .	\$31,766.71	\$20,966.66
<b>From Scholarship Funds and Gifts (continued).</b>			
	Henry Bromfield Rogers, . . . . .	200.00	
	Edward Russell, . . . . .	200.00	
	Sales, . . . . .	166.66	
	Saltonstall, . . . . .	175.00	
	Leverett Saltonstall, . . . . .	266.66	
	Mary Saltonstall, . . . . .	300.00	
	Savage, . . . . .	200.00	
	Sever, . . . . .	150.00	
	Sewall, . . . . .	333.84	
	Shattuck, . . . . .	1,950.00	
	Slade, . . . . .	166.66	
	Story, . . . . .	150.00	
	Thayer, . . . . .	8,100.00	
	Gorham Thomas, . . . . .	150.00	
	Toppan, . . . . .	300.00	
	Townsend, . . . . .	916.66	
	Walcott, . . . . .	100.00	
	Christopher M. Weld, . . . . .	400.00	
	Jacob Wendell, . . . . .	200.00	
	Whiting, . . . . .	333.84	
	University, Graduate School, . . . . .	1,450.00	
	"    Lawrence Scientific School, . . . . .	1,350.00	
	Normal,    "    "    "    . . . . .	600.00	
	Anonymous Gift for Scholarship use, . . . . .	100.00	45,025.08
<b>From Beneficiary Funds.</b>			
<b>Edward Austin.</b>			
	Loans to L. S. S. students, . . . . .	\$1,812.82	
	"    Special    "    . . . . .	540.00	\$2,352.82
	Frank Bolles Memorial, . . . . .		46.00
	Moses Day, . . . . .		261.55
<b>Calvin and Lucy Ellis Aid.</b>			
	Beneficiaries, . . . . .	\$933.32	
	Genealogical expenses, . . . . .	20.00	953.32
	Exhibitions, . . . . .		63.99
	Price Greenleaf Aid, . . . . .		15,458.05
	Munroe, . . . . .		476.02
	Palfrey Exhibition, . . . . .		80.00
	Dr. Andrew P. Peabody Memorial, . . . . .		181.55
	Quincy Tufts, . . . . .		535.44
	Stuart Wadsworth Wheeler, . . . . .		100.00
	Samuel Ward, special food for sick students, . . . . .		141.13
	Scholarship and Beneficiary money returned, . . . . .	1,814.00	
	College Appropriations for L. S. S. students, . . . . .	900.00	23,313.87
	Amount carried forward, . . . . .		\$89,305.56

## TABLE NO. II, THE COLLEGE, CONTINUED.

## PAYMENTS.

Amount brought forward, . . . . .		\$89,305.56	
<b>From Prize Funds.</b>			
<b>Bowdoin Prizes for Dissertations.</b>			
Prizes, . . . . .	\$950.00		
Dies for Medals, . . . . .	200.00	\$1,150.00	
<b>Boylston Prizes for Elocution, . . . . .</b>		195.00	
<b>Coolidge Debating, . . . . .</b>		200.00	
<b>Edward Hopkins Gift for "Deturs," . . . . .</b>		170.24	
<b>Sales, . . . . .</b>		45.00	
<b>George B. Schier, . . . . .</b>		250.00	
<b>Charles Sumner, . . . . .</b>		100.00	
<b>Philip Washburn, . . . . .</b>		75.00	2,185.24
<b>From Sundry Funds for Special Purposes.</b>			
<b>Francis James Child Memorial, books, . . . . .</b>	\$550.99		
<b>T. Jefferson Coolidge, research in Physics, . . . . .</b>	2,207.70		
<b>Classical Publication Fund of the Class of 1856.</b>			
<b>Harvard Studies in Classical Philol., \$555.86</b>			
Interest on advance, . . . . .	58.95	609.81	
<b>George A. Gardner, photographs, etc., for Department of Geology, . . . . .</b>		364.09	
<b>Harvard Oriental Series, publications, . . . . .</b>		715.00	
<b>Ingersoll Lecture, printing, . . . . .</b>		40.00	
<b>Joseph Lovering, research in Physics, . . . . .</b>		61.89	
<b>William Belden Noble Lectures, printing, . . . . .</b>		101.21	
<b>George W. Sawin, books for Department of Mathematics, . . . . .</b>		197.99	
<b>Barthold Schlesinger, collections for Germanic Museum, . . . . .</b>		1,000.00	
<b>John E. Thayer, Quarterly Journal of Economics, . . . . .</b>		789.82	
<b>Elizabeth Torrey, books for Department of History, . . . . .</b>		116.67	
<b>Henry Warren Torrey, publications, . . . . .</b>		823.56	
<b>Unknown Memorial, services and expenses, . . . . .</b>		2,737.74	
<b>Cyrus M. Warren, research in Chemistry, . . . . .</b>		19.50	
<b>Chauncey Wright, books for Department of Mathematics, . . . . .</b>		73.92	
<b>Henry C. Warren, publications, . . . . .</b>		904.58	
<b>Nelson Robinson, Jr.</b>			
<b>Expenses of Nelson Robinson Jr.</b>			
Hall, . . . . .	\$2,887.77		
<b>Expenses in Department of Architecture, . . . . .</b>	325.35		
<b>Expenses in Department of Landscape Architecture, . . . . .</b>	250.00	3,463.12	14,777.09
Amount carried forward, . . . . .			\$106,267.89

TABLE NO. II, THE COLLEGE, CONTINUED.

## PAYMENTS.

Amount brought forward, . . . . .		\$106,267.89	
<b>Appleton Chapel.</b>			
Preaching and morning services, . . . . .	\$3,273.55		
Organist and Choir-master, . . . . .	2,000.00		
Choir, . . . . .	1,600.00		
Music and binding, . . . . .	413.50		
Fuel, gas, cleaning, &c., . . . . .	1,066.36		
Furniture, . . . . .	37.00		
Repairing Organ, . . . . .	808.20		9,198.61
<b>Jefferson Physical Laboratory.</b>			
Spent on building, from income of Fund, . . . . .	\$19.04		
Laboratory expenses, . . . . .	\$3,760.34		
Less part paid by the College, . . . . .	600.00	3,160.34	
Expenses paid from Theodore Lyman's gift, . . . . .	356.80		3,535.68
<b>Hemenway Gymnasium.</b>			
Salaries and wages, . . . . .	\$4,504.25		
Repairs and improvements, . . . . .	269.02		
Janitors and cleaning, . . . . .	2,377.84		
Fuel, . . . . .	997.12		
Apparatus, . . . . .	600.00		
Insurance, . . . . .	218.25		
Water, . . . . .	203.76		
Lighting, . . . . .	833.16		
Printing, . . . . .	56.40		
Furniture, . . . . .	2.06		
Stationery and postage, . . . . .	77.05		
Supplies and sundries, . . . . .	25.71	\$10,164.62	
Less amount received from other departments, . . . . .		1,223.58	8,941.04
<b>Botanic Garden and Botanic Museum.</b>			
Salaries, labor, repairs, materials, &c., . . . . .	\$9,648.45		
Interest on advances, . . . . .	488.44		
Cases, from gift, . . . . .	231.65		10,368.54
<b>Gray Herbarium.</b>			
Salaries, . . . . .	\$4,525.00		
Labor, repairs, materials, &c., . . . . .	3,457.85		7,982.85
<b>Summer Schools.</b>			
Salaries, . . . . .	\$13,629.50		
Clerical services, . . . . .	400.00		
Janitors and cleaning, . . . . .	79.44		
Water, . . . . .	14.76		
Printing, . . . . .	797.69		
Furniture, . . . . .	4.00		
Instruments and apparatus, . . . . .	15.36		
Amounts carried forward, . . . . .		\$14,940.75	\$146,294.61

TABLE NO. II, THE COLLEGE, CONTINUED.

## PAYMENTS.

Amounts brought forward. . . . .	\$14,940.75	\$146,294.61
<b>Summer Schools (continued).</b>		
Stationery and postage, . . . . .	216.88	
Advertising, . . . . .	502.05	
Services and wages, . . . . .	868.21	
Supplies, materials, and sundries, . . . . .	854.94	
Remission of fees for instruction, . . . . .	195.00	
Receptions and music, . . . . .	197.10	
Restaurant expenses, 1901, . . . . .	449.53	17,223.96
<b>From Special Gifts.</b>		
For Department of Architecture, a Corinthian capital, . . . . .	\$125.00	
“ “ Botany, sugar-cane investigation, . . . . .	948.98	
“ “ The Classics, books, . . . . .	379.03	
“ “ “ lantern slides, . . . . .	153.44	
“ “ Education, books, . . . . .	526.62	
“ “ English, “ . . . . .	65.10	
“ “ French, books, . . . . .	10.63	
“ “ Geology and Geography, Norwegian photographs, . . . . .	100.00	
“ “ German, books, . . . . .	7.12	
“ “ History and Government, books, . . . . .	41.64	
“ “ Mining and Metallurgy, equipment of laboratory of Metallurgical Chemistry, . . . . .	2,995.99	
“ “ Music, books and music, . . . . .	87.33	
“ “ “ expenses in Music 7, . . . . .	12.00	
“ “ Physics, research, . . . . .	23.00	
“ “ Political Economy, books, . . . . .	15.19	
“ “ Sanskrit, publications, . . . . .	1,310.65	
“ Collections for a Germanic Museum, . . . . .	3,000.00	
“ Concert of Danish Music, . . . . .	313.59	
“ Lowell Memorial Library, books, . . . . .	59.40	
“ Semitic collections, . . . . .	3,872.35	
“ Semitic Library, books, . . . . .	450.35	
“ Social Questions Library, books, . . . . .	37.06	14,534.42
<b>Appropriations for collections, laboratories, &amp;c.</b>		
Anthropology (Prof. F. W. Putnam), . . . . .	\$150.00	
Botany (Prof. Goodale), . . . . .	200.00	
Chemistry (Prof. H. B. Hill), . . . . .	500.00	
“ technical (Asst. Prof. Sanger), . . . . .	250.00	
Fine Arts and Drawing (Prof. Moore), . . . . .	300.00	
Geology and Geography (Asst. Prof. Ward), . . . . .	250.00	
“ for publications, . . . . .	200.00	
Instruments for camp at Squam Lake (Prof. Hollis), . . . . .	1,550.00	
Amounts carried forward, . . . . .	\$3,400.00	\$178,052.99

TABLE NO. II, THE COLLEGE, CONTINUED.  
PAYMENTS.

Amounts brought forward, . . . . .	\$3,400.00	\$178,052.99
<b>Appropriations for collections, laboratories, &amp;c. (continued).</b>		
Martinique collections (Instr. Jaggar), . . . . .	200.00	
Mineralogy (Prof. Wolff), . . . . .	250.00	
Mining and Metallurgy (Prof. H. L. Smyth), . . . . .	4,005.00	
Music (Prof. Paine), . . . . .	250.00	
Petrography, microscopes (Prof. Wolff), . . . . .	300.00	
Psychology (Prof. Münsterberg), . . . . .	300.00	
"    for publications, . . . . .	600.00	
Physics (Prof. Trowbridge), . . . . .	1,000.00	
Zoölogy (Prof. Mark), . . . . .	400.00	
"    for publications, . . . . .	500.00	
Laboratory fees appropriated, . . . . .	23,183.47	
Fuel and services in Nat. Hist. Laboratories, . . . . .	1,500.00	
Fuel, services, &c., in Jefferson Ph. Laboratory, . . . . .	600.00	36,488.47
<b>Salaries.</b>		
Instruction, . . . . .	\$375,525.34	
Deans, . . . . .	5,500.00	
Chairmen of Committees, . . . . .	1,400.00	
Medical Visitor, Recorders, Secretary, Curators, &c., . . . . .	5,900.00	
Examination Proctors, . . . . .	1,300.00	389,625.34
<b>For College Buildings not valued in Treasurer's Books.</b>		
Repairs, improvements, &c., . . . . .	\$9,877.57	
Cleaning and care, . . . . .	21,658.47	
Fuel, . . . . .	18,124.77	
Water, . . . . .	1,190.31	
Lighting, . . . . .	4,964.64	
Insurance, . . . . .	1,068.45	51,880.11
<b>General Expenses.</b>		
Deans and Chairmen of Committees, clerical and office expenses, . . . . .	\$18,547.02	
Commission on Admission to N. E. Colleges, . . . . .	153.18	
Reading examination books, . . . . .	3,159.20	
Services of proctors, . . . . .	1,981.10	
"    assistants to instructors, . . . . .	3,714.99	
"    undergraduates, . . . . .	1,445.98	
"    mechanics in department of Physiology and Hygiene, . . . . .	900.00	
"    Head Guide in College grounds, . . . . .	62.95	
Attendants in department libraries and laboratories, . . . . .	3,839.10	
Admission examinations, . . . . .	2,660.33	
Pews hired in Cambridge churches, . . . . .	1,795.50	
Commencement Dinner, . . . . .	809.27	
Printing office, expenses, . . . . .	\$23,175.71	
Less receipts, . . . . .	15,058.88	8,116.83
Printing, . . . . .		229.29
Amounts carried forward . . . . .	\$41,914.74	\$656,046.91



TABLE NO. II, THE COLLEGE, CONTINUED.

## PAYMENTS.

Amounts brought forward, . . . . .	\$41,914.74	\$656,046.91
<b>General Expenses (continued).</b>		
Books, maps, and binding, . . . . .	628.94	
Annals of Mathematics, . . . . .	914.08	
Harvard Engineering Society's Journal, . . . . .	188.74	
Handbook of American History, . . . . .	1,616.67	
Furniture, . . . . .	4,500.42	
Advertising, . . . . .	1,882.47	
Watchmen, . . . . .	1,688.80	
Freight, and sundries, . . . . .	879.24	
Supplies, tools, and materials, . . . . .	1,569.57	
Legal services, . . . . .	113.66	
Music, Class-Day, . . . . .	125.00	
Receptions, . . . . .	526.46	
Use of Grays 18 by English department, . . . . .	100.00	
Services and expenses at Faculty meetings, . . . . .	68.04	
Blank books for examinations, . . . . .	779.00	
Zoological laboratory contributions and expenses, . . . . .	54.79	
Expenses of camp at Squam Lake (Engineering), . . . . .	4,800.78	
Taxes on " " " . . . . .	39.97	
Engineering courses in Pierce Hall, . . . . .	3,918.82	
Travelling expenses in Mining 12, . . . . .	289.99	
Travelling expenses in Economics 5 and 18, . . . . .	59.60	
Expenses of Medical Visitor, . . . . .	197.83	
Diplomas, . . . . .	781.78	
College seal and press, . . . . .	45.00	
Engrossing letters, . . . . .	51.00	
Tuning and moving piano, . . . . .	41.75	
Meeting for awarding Academic Distinctions, . . . . .	32.75	67,749.79
		<u>\$723,796.70</u>

TABLE NO. III.

## THE LIBRARY.

## RECEIPTS.

Income of Book Funds, and Gifts and Receipts for the purchase of books.

Nathaniel I. Bowditch, . . . . .	\$101.90
Bright ( $\frac{1}{2}$ income of the Bright Legacy), . . . . .	1,200.00
Edwin Conant ( $\frac{1}{4}$ income), . . . . .	333.40
Constantius ( $\frac{1}{2}$ income), . . . . .	628.47
Denny, . . . . .	254.83
Eliza Farrar, . . . . .	254.83
Horace A. Haven, . . . . .	153.86
Francis B. Hayes, . . . . .	483.84

Amount carried forward, . . . . . \$3,405.63

## TABLE NO. III, THE LIBRARY, CONTINUED.

## RECEIPTS.

Amount brought forward, . . . . .	\$3,405.63	
Income of Book Funds, Gifts, etc. ( <i>continued</i> ).		
George Hayward, . . . . .	254.35	
Thomas Hollis, . . . . .	113.90	
Sidney Homer, . . . . .	103.10	
Frederick A. Lane, . . . . .	255.36	
Lowell, . . . . .	1,249.68	
Charles Minot, . . . . .	2,914.80	
Lucy Osgood, . . . . .	344.69	
Mary Osgood, . . . . .	337.92	
Henry L. Pierce, . . . . .	4,848.05	
Francis Sales, . . . . .	189.22	
Stephen Salisbury, . . . . .	254.78	
Sever, . . . . .	966.67	
Samuel Shapleigh, . . . . .	192.00	
George B. Sohler (part), . . . . .	89.55	
Subscription for Library, . . . . .	507.94	
Charles Sumner, . . . . .	1,805.81	
Kenneth Matheson Taylor, . . . . .	245.42	
Ichabod Tucker, . . . . .	212.86	
James Walker, . . . . .	763.25	
Thomas W. Ward, . . . . .	254.40	
Executors of Robert Waterston (balance), . . . . .	11.33	
J. Huntington Wolcott, . . . . .	965.86	
Gifts for books, . . . . .	2,794.91	
Sale of duplicate books, . . . . .	239.53	
Received for books lost, . . . . .	62.43	
Fines, . . . . .	302.90	\$23,686.34
Income of R. M. Hodges Fund, for publishing		
Bibliographical Contributions, . . . . .		368.79
Income of Funds for general purposes.		
Daniel Austin, . . . . .	\$299.04	
Edwin Conant ( $\frac{1}{3}$ income), . . . . .	1,000.18	
Constantius ( $\frac{1}{2}$ income), . . . . .	623.47	
Fund of the Class of 1851 (accumulating), . . . . .	26.78	
“ “ “ “ (C. F. Dunbar's Gift), . . . . .	26.35	
Price Greenleaf, . . . . .	15,658.86	
Jarvis, . . . . .	24.00	
Henry T. Morgan, . . . . .	3,933.65	
James Savage ( $\frac{1}{3}$ net income), . . . . .	1,287.00	
Daniel Treadwell, . . . . .	572.40	
Eben Wright, . . . . .	4,800.00	28,251.53
Fees for use of Library, . . . . .	\$85.00	
Sale of Scudder catalogues, . . . . .	7.50	
Sale of Index Subject Catalogues, . . . . .	1.50	94.00
		<u>\$52,400.66</u>

TABLE No. III, THE LIBRARY, CONTINUED.

## PAYMENTS.

For Books, from the following Funds, Gifts, etc.		
Bowditch, . . . . .	\$101.92	
Bright, . . . . .	1,229.76	
Conant, . . . . .	858.11	
Constantius, . . . . .	609.08	
Denny, . . . . .	261.52	
Farrar, . . . . .	264.18	
Haven, . . . . .	161.02	
Hayes, . . . . .	477.20	
Hayward, . . . . .	257.22	
Hollis, . . . . .	117.19	
Homer, . . . . .	117.26	
Lane, . . . . .	278.50	
Lowell, . . . . .	1,015.01	
Minot, . . . . .	3,119.41	
Lucy Osgood, . . . . .	380.13	
Mary Osgood, . . . . .	356.41	
Pierce, . . . . .	5,053.57	
Sales, . . . . .	182.05	
Salisbury, . . . . .	269.92	
Sever, . . . . .	925.05	
Shapleigh, . . . . .	212.66	
Schier, . . . . .	98.76	
Subscription Fund, . . . . .	372.68	
Sumner, . . . . .	1,815.97	
Taylor, . . . . .	266.90	
Tucker, . . . . .	249.32	
Walker, . . . . .	753.83	
Ward, . . . . .	252.26	
J. Huntington Wolcott, . . . . .	918.45	
Gift for books on Aeronautics, . . . . .	4.34	
A. C. Coolidge Gifts, . . . . .	1,023.04	
Harold J. Coolidge Gift, . . . . .	26.17	
Mrs. J. R. Coolidge Gift, . . . . .	8.96	
Dante Society Gift, . . . . .	50.33	
Gifts for English Literature of the 17th and 18th centuries, . . . . .	276.74	
Gardner Gift, . . . . .	10.97	
Hammer Gift, . . . . .	417.70	
Loeb Gift, . . . . .	19.17	
Saturday Club Gift, . . . . .	416.86	
John Harvey Treat Gift, . . . . .	251.34	
Duplicate money, . . . . .	246.23	
Fines, . . . . .	315.48	\$23,537.62
Salaries, . . . . .	\$15,700.00	
Services and wages, . . . . .	18,156.72	
Amounts carried forward, . . . . .	\$33,856.72	\$23,537.62

TABLE NO. III, THE LIBRARY, CONTINUED.

## PAYMENTS.

Amounts brought forward, . . . . .	\$33,856.72	\$33,537.63
Repairs and improvements, . . . . .	455.17	
Janitors and cleaning, . . . . .	1,076.75	
Fuel, . . . . .	1,321.63	
Water, . . . . .	22.98	
Lighting, . . . . .	1,608.96	
Printing, . . . . .	1,518.84	
Furniture, . . . . .	350.58	
Stationery and postage, . . . . .	548.63	
Binding, . . . . .	2,553.72	
Insurance, . . . . .	21.88	
Electric power, . . . . .	94.47	
Freight, supplies, and sundries, . . . . .	946.71	44,376.54
		<u>\$67,914.16</u>

TABLE NO. IV.

## DIVINITY SCHOOL.

## RECEIPTS.

Income of Funds for Instruction, or for general purposes.		
Divinity School (balance), . . . . .	\$1,354.51	
New Endowment, . . . . .	3,428.50	
Oliver Ames, . . . . .	816.00	
Hannah C. Andrews, . . . . .	25.20	
Daniel Austin, . . . . .	42.72	
Adams Ayer, . . . . .	48.00	
Joseph Baker, . . . . .	378.00	
Beneficiary money returned (balance), . . . . .	227.04	
Bussey Professorship, . . . . .	1,804.03	
Benjamin Bussey Trust ( $\frac{1}{2}$ net income), . . . . .	4,919.26	
Joshua Clapp, . . . . .	104.55	
Edwin Conant, . . . . .	240.00	
Dexter Lectureship, . . . . .	973.44	
Frothingham Professorship, . . . . .	2,231.88	
Abraham W. Fuller, . . . . .	50.40	
Lewis Gould, . . . . .	43.73	
John Hancock Professorship, . . . . .	\$288.39	
C. L. Hancock, . . . . .	<u>4,685.92</u>	4,974.31
Haven, . . . . .	240.00	
Samuel Hoar, . . . . .	50.40	
Henry P. Kidder, . . . . .	480.00	
Henry Lienow, . . . . .	440.88	
Caroline Merriam, . . . . .	50.40	
Amount carried forward, . . . . .	\$22,913.25	

TABLE No. IV, DIVINITY SCHOOL, CONTINUED.

## RECEIPTS.

Amount brought forward, . . . . .	\$22,913.25	
<b>Income of Funds for Instruction, etc. (<i>continued</i>).</b>		
Parkman Professorship, . . . . .	768.77	
John W. Quinby, . . . . .	22.18	
Abby Crocker Richmond, . . . . .	48.00	
John L. Russell, . . . . .	48.00	
William B. Spooner, . . . . .	480.00	
Thomas Tileston of New York Endowment, . . . . .	1,920.00	
Mary P. Townsend, . . . . .	252.00	
Winthrop Ward, . . . . .	100.80	
Winn Professorship, . . . . .	2,584.61	\$29,187.56
<b>Income of Scholarship and Beneficiary Funds.</b>		
Abner W. Buttrick, . . . . .	\$625.87	
Thomas Cary, . . . . .	262.51	
George Chapman, . . . . .	128.35	
Joshua Clapp, . . . . .	211.10	
Jackson Foundation, . . . . .	711.89	
J. Henry Kendall, . . . . .	254.21	
Nancy Kendall, . . . . .	168.58	
William Pomroy, . . . . .	50.40	2,407.91
<b>Income of Book Funds.</b>		
Rushton Dashwood Burr, . . . . .	\$177.22	
Louiss J. Hall, . . . . .	83.07	210.29
<b>Receipts from Students.</b>		
Tuition fees, regular courses, . . . . .	\$4,787.50	
“ “ Summer School, . . . . .	1,170.00	
Divinity Hall and house, . . . . .	2,970.00	
Library fines, . . . . .	2.85	8,880.85
Gift from Society for Promoting Theological Education, . . . . .	\$7,987.71	
Sale of tickets to Alumni Dinner, . . . . .	57.00	
“ catalogues and duplicate books, . . . . .	4.75	8,049.46
		<u>\$48,685.57</u>

## PAYMENTS.

<b>From Scholarship Funds.</b>		
Thomas Cary, . . . . .	\$240.00	
George Chapman, . . . . .	100.00	
Joshua Clapp, . . . . .	180.00	
Jackson, . . . . .	693.34	
J. H. Kendall, . . . . .	200.00	
Nancy Kendall, . . . . .	140.00	\$1,558.34
<b>From Beneficiary Funds.</b>		
Abner W. Buttrick, . . . . .	\$595.00	
William Pomroy, . . . . .	49.35	644.35
Amount carried forward, . . . . .		\$2,197.69

TABLE NO. IV, DIVINITY SCHOOL, CONTINUED.

PAYMENTS.	
Amount brought forward, . . . . .	\$2,197.69
Salaries for instruction, . . . . .	\$23,666.67
Summer School. Salaries for instruction, . . \$1,160.00	
Expenses, . . . . .	425.44
	1,585.44
Secretary and Librarian, . . . . .	1,750.00
Services and wages, . . . . .	283.89
Library Assistants, . . . . .	962.35
Proctors, . . . . .	40.00
Repairs, improvements, and labor, . . . . .	498.44
Cleaning and care of rooms, . . . . .	1,550.10
Fuel, . . . . .	608.81
Water, . . . . .	90.38
Lighting, . . . . .	358.74
Printing, . . . . .	47.20
Furniture, . . . . .	58.00
Stationery and postage, . . . . .	212.48
Books, . . . . .	571.94
Binding, . . . . .	47.85
Catalogues, . . . . .	378.40
Advertising, . . . . .	556.73
Diplomas and sundries, . . . . .	72.73
Alumni dinner, . . . . .	60.00
Proportion of expenses of Gymnasium, . . . . .	68.08
Tuning and repairing organ, . . . . .	17.53
American School for Oriental study and research in Palestine (2d payment), . . . . .	100.00
Subscription to the Fellowship in Christian Archaeology in the American School of Classical Studies in Rome, . .	25.00
Alterations of Library building, . . . . .	2,900.00
Electric wiring, . . . . .	450.85
	36,961.61
	<u>\$39,159.30</u>

TABLE NO. V.  
LAW SCHOOL.

RECEIPTS.	
Income of Funds.	
Law School, balance, . . . . .	\$7,843.25
James Barr Ames Prize, . . . . .	173.29
Bemis Professorship, . . . . .	3,152.98
Benjamin Bussey Professorship, . . . . .	1,151.04
Benjamin Bussey Trust ( $\frac{1}{4}$ net income), . . . . .	4,919.26
Nathan Dane Professorship, . . . . .	756.00
	<u>\$17,995.82</u>
Amount carried forward, . . . . .	\$17,995.82

## TABLE NO. V, LAW SCHOOL, CONTINUED.

## RECEIPTS.

Amount brought forward, . . . . .	\$17,995.82	
Income of Funds ( <i>continued</i> ).		
Law School Book, . . . . .	2,257.01	
Law School Library, . . . . .	4,800.00	
Isaac Royall Professorship, . . . . .	400.37	
Weld " . . . . .	4,559.76	
Scholarship money returned, . . . . .	60.82	\$30,073.78
Tuition fees, . . . . .		92,017.50
Sale of Law School Quinquennial Catalogue, . . . . .		4.75
		<u>\$122,096.08</u>

## PAYMENTS.

Salaries for instruction, . . . . .	\$46,988.83	
Librarian and Assistants, . . . . .	7,033.17	
Secretary, . . . . .	1,000.00	
Reader to the Dane Professor, . . . . .	521.66	
Reading examination books, . . . . .	325.00	
Services of proctors, . . . . .	346.50	
Scholarships, . . . . .	4,550.00	
Repairs and improvements, . . . . .	376.14	
Janitor, cleaning, &c., . . . . .	1,553.81	
Fuel, . . . . .	986.12	
Water, . . . . .	68.88	
Lighting, . . . . .	1,058.98	
Printing, . . . . .	244.55	
Furniture, . . . . .	159.36	
Stationery and postage, . . . . .	391.26	
Books, . . . . .	9,421.72	
Binding, . . . . .	2,084.20	
Advertising, . . . . .	136.44	
Telephone, . . . . .	113.78	
Freight, . . . . .	194.73	
Sundries, . . . . .	241.62	
Proportion of expenses of Gymnasium, . . . . .	1,155.50	
Insurance, . . . . .	7.50	
Travelling expenses, . . . . .	48.36	
Electric power, . . . . .	50.00	
Legal services, . . . . .	124.00	
Catalogue, . . . . .	259.11	
Restoring portrait, . . . . .	50.00	
Diplomas, . . . . .	135.15	
Expenses of delegate to Association of American Law Schools, and dues, . . . . .	128.40	\$79,749.27

TABLE NO. VI.  
MEDICAL SCHOOL.

RECEIPTS.

Income of Funds for Instruction, or for general purposes.

Medical School, balance, . . . . .	\$3,091.10	
Edward M. Barringer (part), . . . . .	644.62	
John B. and Buckminster Brown, . . . . .	934.37	
Caroline Brewer Croft (part), . . . . .	1,500.00	
Calvin and Lucy Ellis (part), . . . . .	17,030.00	
George Fabyan, . . . . .	4,864.22	
Samuel E. Fitz, . . . . .	88.13	
Henry Harris ( $\frac{1}{2}$ income), . . . . .	718.54	
Hersey Professorship ( $\frac{2}{3}$ income), . . . . .	388.17	
Jackson, . . . . .	1,096.23	
William O. Moseley, . . . . .	2,539.20	
New subscription, . . . . .	1,860.00	
Dr. Ruppenner, . . . . .	448.13	
George C. Shattuck, . . . . .	2,446.28	
Mary W. Swett, . . . . .	756.73	
Samuel W. Swett, . . . . .	960.00	
Quincy Tufts, . . . . .	96.00	
Henry Willard Williams, . . . . .	1,599.94	\$41,061.64

Income of Fellowship Funds.

Edward Austin (part) Teaching, . . . . .	\$3,000.00	
George Cheyne Shattuck Memorial, . . . . .	254.02	
Charles Eliot Ware " . . . . .	271.92	
John Ware " . . . . .	252.14	2,778.08

Income of Scholarship Funds.

Edward M. Barringer (part), . . . . .	\$580.00	
Lucius F. Billings, . . . . .	241.20	
David Williams Cheever, . . . . .	274.03	
Cotting Gift, . . . . .	148.27	
Orlando W. Doe, . . . . .	132.77	
Joseph Eveleth (part), . . . . .	600.00	
John Foster, income for Medical Students every other year, . . . . .	152.21	
Lewis and Harriet Hayden, . . . . .	279.26	
William Hilton (part), . . . . .	450.00	
C. M. Jones, . . . . .	305.52	
Alfred Hosmer Linder, . . . . .	251.23	
Charles B. Porter, . . . . .	264.96	
Charles Pratt Strong, . . . . .	211.49	
Isaac Sweetser, . . . . .	302.11	
John Thomson Taylor, . . . . .	251.14	
Edward Wigglesworth, . . . . .	252.19	4,696.38

Amount carried forward, . . . . . \$48,536.10



## TABLE NO. VI, MEDICAL SCHOOL, CONTINUED.

## RECEIPTS.

Amount brought forward, . . . . .		\$48,536.10
Income of Prize Funds.		
Ward Nicholas Boylston, . . . . .	\$169.80	
William H. Thorndike, . . . . .	298.08	467.88
Income of Sundry Funds and Gifts for special purposes.		
Edward Austin (Bacteriological Laboratory), .	\$521.09	
Robert C. Billings (part), . . . . .	800.00	
J. Ingersoll Bowditch, . . . . .	295.82	
Ward Nicholas Boylston, for Medical Books,	145.58	
Caroline Brewer Croft (part), . . . . .	408.11	
Medical Library, . . . . .	76.99	
Gifts for Pathological Department Library, . . . .	35.62	
“ Laboratory of Comparative Pathology, . .	9.11	
Surgical Laboratory, . . . . .	243.81	
F. B. Greenough (surgical research), . . . .	96.96	
Warren Fund for Anatomical Museum, . . . . .	688.37	2,815.96
Gifts for present use, . . . . .		4,400.00
Receipts from students.		
Tuition fees, regular courses, . . . . .	\$87,643.67	
Less transferred to Dental School, . . . . .	100.00	
	\$87,543.67	
Tuition fees, graduate courses, . . . . .	700.00	
“ “ Dental students, . . . . .	4,590.00	\$92,833.67
“ “ Summer courses, . . . . .		4,570.00
Graduation fees, . . . . .		4,020.00
Matriculation fees, . . . . .		335.00
Examination fees, . . . . .		321.00
Laboratory fees.		
Admission Chemistry, . . . . .	\$100.00	
Chemistry, . . . . .	1,452.82	
Embryology, . . . . .	200.00	
Histology, . . . . .	20.00	
Operative Surgery, . . . . .	240.00	
Physiology, . . . . .	322.70	
Practical Anatomy, . . . . .	890.50	3,226.02
Use of microscopes, . . . . .		1,417.00
Repayment for services on account of new buildings, . . . . .		117.64
		\$163,059.77

## PAYMENTS.

From Fellowship Funds.		
Edward Austin, Teaching, . . . . .	\$2,000.00	
George Cheyne Shattuck Memorial, . . . . .	225.00	
Charles Eliot Ware Memorial, . . . . .	815.00	
John Ware Memorial, . . . . .	225.00	\$2,765.00
Amount carried forward, . . . . .		\$2,765.00

## TABLE NO. VI, MEDICAL SCHOOL, CONTINUED.

## PAYMENTS.

	Amount brought forward, . . . . .		\$2,765.00
<b>From Scholarship Funds.</b>			
	Edward M. Barringer, . . . . .	\$580.00	
	Lucius F. Billings, . . . . .	120.00	
	David Williams Cheever, . . . . .	150.00	
	Cotting Gift, . . . . .	75.00	
	Orlando W. Doe, . . . . .	140.00	
	Joseph Eveleth, . . . . .	600.00	
	John Foster, income for Medical Students (bal.), . . . . .	60.00	
	Lewis and Harriet Hayden, . . . . .	352.98	
	William Hilton, . . . . .	270.00	
	C. M. Jones, . . . . .	350.00	
	Alfred Hosmer Linder, . . . . .	200.00	
	Charles B. Porter, . . . . .	280.00	
	Charles Pratt Strong, . . . . .	60.00	
	Isaac Sweetser, . . . . .	250.00	
	John Thomson Taylor, . . . . .	200.00	
	Edward Wigglesworth, . . . . .	200.00	
	Faculty Scholarships, . . . . .	800.00	4,687.98
<b>From Prize Funds.</b>			
	Ward Nicholas Boylston. Prize, . . . . .	\$150.00	
	Advertising, . . . . .	6.25	156.25
<b>From Sundry Funds and Gifts for special purposes.</b>			
	Edward Austin (Bacteriological Laboratory), . . . . .	\$301.48	
	Robert C. Billings, Journal of Medical Research, . . . . .	300.00	
	J. Ingersoll Bowditch, Physiology, . . . . .	212.20	
	Ward Nicholas Boylston for Medical Books, . . . . .	409.89	
	Caroline Brewer Croft (part), cancer investigations, . . . . .	1,744.50	
	Gifts for Pathological Department Library, . . . . .	761.93	
	Surgical Laboratory, . . . . .	515.91	
	Warren Fund for Anatomical Museum, . . . . .	669.55	
	Sundry Gifts, . . . . .	1,367.11	6,282.57
<b>Appropriations.</b>			
	Anatomy, . . . . .	\$3,250.00	
	Bacteriology, . . . . .	600.00	
	Chemistry, . . . . .	1,427.74	
	Clinical Medicine, . . . . .	50.00	
	Clinical Surgery, . . . . .	175.00	
	Gynaecology, . . . . .	25.00	
	Histology and Embryology, . . . . .	1,100.00	
	Hygiene, . . . . .	200.00	
	Museum, . . . . .	312.00	
	Obstetrics, . . . . .	250.00	
	Amounts carried forward, . . . . .	\$7,389.74	\$13,891.80

TABLE NO. VI, MEDICAL SCHOOL, CONTINUED.

## PAYMENTS.

Amounts brought forward, . . . . .	\$7,389.74	\$18,891.80
<b>Appropriations (continued).</b>		
Pathology, . . . . .	800.00	
Pharmacology and Therapeutics, . . . . .	700.00	
Physiology, . . . . .	3,122.70	
Surgery, . . . . .	400.00	
Theory and Practice, . . . . .	100.00	12,512.44
<b>Graduate courses, fees repaid to Instructors, . . . . .</b>	<b>\$700.00</b>	
Summer " " " " . . . . .	4,275.00	4,975.00
<b>Salaries for instruction, . . . . .</b>		<b>101,741.66</b>
<b>General Expenses.</b>		
Dean, and Secretary, . . . . .	\$800.00	
Clerical services, . . . . .	1,740.00	
Repairs and improvements, . . . . .	3,154.77	
Janitor and cleaning, . . . . .	5,267.01	
Fuel, . . . . .	1,940.39	
Water, . . . . .	1,123.20	
Lighting and gas, . . . . .	2,788.08	
Printing, . . . . .	486.32	
Furniture, . . . . .	145.22	
Instruments and apparatus, . . . . .	98.05	
Stationery and postage, . . . . .	328.30	
Advertising and catalogues, . . . . .	1,859.36	
Insurance, . . . . .	59.00	
Proctors, . . . . .	240.00	
Mechanics and laboratory attendants, . . . . .	6,722.67	
Electric power, . . . . .	1,416.03	
Sundries, . . . . .	426.48	
Supplies and material, . . . . .	1,831.48	
Diplomas, . . . . .	121.35	
Telephone, . . . . .	180.75	
Time service, . . . . .	25.00	
Publishing work on vivisection (part), . . . . .	200.00	80,958.46
		<b>\$164,074.86</b>

**Medical School Undertaking.**

## RECEIPTS.

Gifts received in 1901-02.

<b>George Higginson Professorship of</b>	
Physiology Fund, . . . . .	\$100,000.00
<b>Jackson Professorship of Clinical</b>	
Medicine (addition of 1902), . . . . .	12,500.00
<b>John D. Rockefeller Gift (part),</b>	308,758.17
<b>David Sears Fund for instruction in</b>	
Neurology, . . . . .	25,000.00
Amount carried forward, . . . . .	\$446,258.17

TABLE NO. VI, Medical School Undertaking (continued).

## RECEIPTS.

Amount brought forward, . . .	\$446,258.17	
Gifts received in 1901-02 (continued).		
<b>Shattuck</b> Professorship of Pathological Anatomy (addition of 1902), . . .	13,500.00	
Gift available only for buildings, . . .	1,000.00	
Unrestricted gifts, . . . . .	188,024.79	\$648,782.96
Appropriations by the University, from April 30, 1902.		
<b>Robert C. Billings</b> Fund, . . . . .	\$92,500.00	
<b>Henry L. Pierce</b> Residuary Bequest (part), . . . . .	350,000.00	442,500.00
Transfers to this account.		
Fund of the School of Comparative Medicine, with interest thereon Aug. 1, 1902, . . . . .	\$4,481.98	
Gift for Pathological Laboratory (Veterinary School), . . . . .	5,166.38	9,598.36
		\$1,100,881.32
Income of Funds and Gifts.		
<b>Robert C. Billings</b> Fund, from April 30, 1902, . . . . .	\$1,110.00	
<b>George Higginson</b> Professorship, . . . . .	1,322.02	
<b>Jackson</b> Professorship (addition of 1902), . . . . .	175.01	
<b>Henry L. Pierce</b> Fund, from April 30, 1902, . . . . .	4,300.00	
<b>John D. Rockefeller</b> Gift, . . . . .	3,705.12	
<b>David Sears</b> Fund, . . . . .	300.00	
<b>Shattuck</b> Professorship (addition of 1902), . . . . .	213.98	
Gift for Pathological Laboratory (V. S.), . . . . .	98.41	
"    buildings, . . . . .	11.73	
Unrestricted gifts, . . . . .	1,807.98	12,944.25
		<u>\$1,113,825.57</u>

## PAYMENTS.

Real Estate, Longwood and Huntington Avenues, and Francis St., Boston, . . . . .	\$616,623.90	
Interest on advances, . . . . .	6,581.98	
	\$623,205.88	
Less net rents received, . . . . .	430.90	\$622,774.98
Real Estate, Huntington Avenue, Boston, . . . . .	\$39,610.65	
Interest on advances, . . . . .	216.00	
	\$39,826.65	
Less net rents received, . . . . .	393.16	39,433.49
Sundry expenses, . . . . .	\$203.11	
Interest on advances, . . . . .	4.79	207.90
Amount carried forward, . . . . .	\$662,416.37	

TABLE NO. VI, **Medical School Undertaking** (*continued*).

## PAYMENTS.

Amount brought forward, . . . . .	\$662,416.37	
Income of Funds, which has been transferred to the Medical School to pay salaries.		
<b>Jackson</b> Professorship (addition of 1902), . . . . .	\$175.01	
<b>Shattuck</b> Professorship (addition of 1902), . . . . .	218.98	388.99
Pathological Laboratory, expenditures, . . . . .		296.00
		<u>\$663,101.86</u>

TABLE NO. VII.  
**DENTAL SCHOOL.**

## RECEIPTS.

Income of Funds, Gifts.			
Dental School, balance, . . . . .	\$1,798.76		
Dental School Endowment, . . . . .	108.29		
<b>HENRY C. WARREN</b> Endowment, . . . . .	1,104.00		
Gifts for new building. Gift, . . . . .	\$50.00		
Interest, . . . . .	909.02	959.02	\$3,965.07
Receipts from students.			
Tuition fees, . . . . .	\$16,080.00		
Less transferred to Medical School, . . . . .	4,590.00		
	<u>\$11,490.00</u>		
Tuition fees, Medical students, . . . . .	100.00	\$11,590.00	
Examination fees, . . . . .		99.00	
Laboratory fees, . . . . .		1,775.28	
Library fines, . . . . .		.74	13,465.02
Fees from infirmary, . . . . .			3,885.45
Sale of sweepings, . . . . .		\$86.89	
" platinum, gold, and rubber, . . . . .		159.79	246.18
			<u>\$21,511.72</u>

## PAYMENTS.

Salaries for instruction, . . . . .	\$12,780.00
Curator and Librarian, . . . . .	150.00
Secretary, . . . . .	300.00
Proctors, . . . . .	140.00
Repairs and improvements, . . . . .	767.04
Janitors and cleaning, . . . . .	1,558.13
Fuel, . . . . .	804.98
Water, . . . . .	111.07
Lighting, . . . . .	395.70
Printing, . . . . .	235.69
Furniture, . . . . .	52.40
Amount carried forward, . . . . .	<u>\$16,795.01</u>

TABLE NO. VII, DENTAL SCHOOL, CONTINUED.

## PAYMENTS.

Amount brought forward, . . . . .	\$16,795.01	
Instruments and apparatus, . . . . .	248.78	
Stationery and postage, . . . . .	188.08	
Books, . . . . .	25.00	
Binding, . . . . .	48.30	
Advertising, . . . . .	819.67	
Services and wages, . . . . .	1,206.59	
Supplies, &c., . . . . .	5,297.25	
Sundries, . . . . .	577.05	
Delegates' expenses, . . . . .	77.78	
Diplomas, . . . . .	41.80	
Catalogue, . . . . .	122.20	
Telephone, . . . . .	128.55	
Microscopes and objectives, . . . . .	322.25	\$25,898.23

TABLE NO. VIII.

## MUSEUM OF COMPARATIVE ZOOLOGY.

## RECEIPTS.

Income of Funds.		
Museum of Comparative Zoölogy (balance), . . .	\$1,528.76	
Agassiz Memorial, . . . . .	14,300.78	
Teachers and Pupils, . . . . .	364.51	
Virginia Barret Gibbs Scholarship, . . . . .	267.70	
Gray Fund for Zoölogical Museum, . . . . .	2,400.00	
Sturgis Hooper, . . . . .	5,174.07	
Humboldt, . . . . .	371.57	
Willard Peele Hunnewell, . . . . .	240.00	
Permanent Fund for Museum of Zoölogy, . . . . .	5,638.51	
Henry L. Pierce, . . . . .	4,800.00	\$35,080.90
Use of lecture rooms by Radcliffe College, . . . . .		700.00
		<u>\$35,780.90</u>

## PAYMENTS.

Paid on the order of the Faculty of the Museum of Comparative Zoölogy, from the following Funds.		
Agassiz Memorial, . . . . .	\$14,300.78	
Teachers and Pupils, . . . . .	364.51	
Gray, . . . . .	2,400.00	
Humboldt, . . . . .	371.57	
William Peele Hunnewell, . . . . .	240.00	
Permanent, . . . . .	5,638.51	
Henry L. Peirce, . . . . .	4,398.33	\$27,713.70
Virginia Barret Gibbs Scholarship, . . . . .	\$333.34	
Sturgis Hooper, salary and expenses, . . . . .	5,066.27	5,399.61
		<u>\$33,113.31</u>

TABLE No. IX.

PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY  
AND ETHNOLOGY.

## RECEIPTS.

Gift for capital account.	
<b>Susan Cornelia Warren Fund, . . . . .</b>	<b>\$5,000.00</b>
Income of Funds.	
<b>Hemenway Fellowship, . . . . .</b>	<b>\$544.70</b>
<b>Peabody Building, . . . . .</b>	<b>1,430.78</b>
<b>Peabody Collection, . . . . .</b>	<b>2,388.41</b>
<b>Peabody Professor, . . . . .</b>	<b>2,388.41</b>
<b>Thaw Fellowship, . . . . .</b>	<b>1,160.24</b>
<b>Henry C. Warren Exploration, . . . . .</b>	<b>494.45</b>
<b>Susan Cornelia Warren, . . . . .</b>	<b>120.00</b>
<b>Robert C. Winthrop Scholarship, . . . . .</b>	<b>254.74</b>
<b>Huntington Frothingham Wolcott, . . . . .</b>	<b>962.98</b>
	<b>9,744.66</b>
Gifts for present use, . . . . .	<b>1,125.00</b>
	<b>\$15,869.66</b>

## PAYMENTS.

<b>Hemenway Fellowship, . . . . .</b>	<b>\$425.00</b>	
<b>Thaw Fellowship, . . . . .</b>	<b>1,150.05</b>	
<b>Robert C. Winthrop Scholarship, . . . . .</b>	<b>200.00</b>	<b>\$1,775.05</b>
<b>Salary of Professor and Curator, . . . . .</b>	<b>\$2,360.29</b>	
<b>Services and wages, . . . . .</b>	<b>2,315.00</b>	
<b>Repairs and improvements, . . . . .</b>	<b>225.32</b>	
<b>Janitor and cleaning, . . . . .</b>	<b>957.75</b>	
<b>Fuel, . . . . .</b>	<b>310.97</b>	
<b>Water, . . . . .</b>	<b>25.00</b>	
<b>Lighting, . . . . .</b>	<b>11.90</b>	
<b>Printing, . . . . .</b>	<b>104.45</b>	
<b>Furniture, . . . . .</b>	<b>24.75</b>	
<b>Stationery and postage, . . . . .</b>	<b>362.87</b>	
<b>Telephone, . . . . .</b>	<b>53.70</b>	
<b>Books, . . . . .</b>	<b>46.66</b>	
<b>Collections and supplies, . . . . .</b>	<b>982.62</b>	
<b>Sundries, . . . . .</b>	<b>234.14</b>	
<b>Interest on advances, . . . . .</b>	<b>80.36</b>	<b>8,095.78</b>
		<b>\$9,870.83</b>

TABLE No. X.  
OBSERVATORY.

RECEIPTS.

Gift for capital account		
Fund for the Advancement of Astronomical Science (1902), . . .	\$20,054.91	
Income of Funds.		
Observatory (balance), . . . . .	\$134.07	
Advancement of Astronomical Science (1902), . . . . .	182.44	
<b>Thomas G. Appleton</b> , . . . . .	240.00	
<b>J. Ingersoll Bowditch</b> , . . . . .	120.00	
<b>Uriah A. Boyden</b> , . . . . .	9,550.37	
<b>Charlotte Harris</b> , . . . . .	96.00	
<b>Haven</b> , . . . . .	2,160.00	
<b>James Hayward</b> , . . . . .	1,008.00	
Observatory Endowment, . . . . .	2,400.00	
<b>Paine Professorship</b> , . . . . .	2,400.00	
<b>Robert Treat Paine</b> , . . . . .	13,180.78	
<b>Edward B. Phillips</b> , . . . . .	5,294.11	
<b>Josiah Quincy</b> , . . . . .	562.22	
<b>James Savage</b> ( $\frac{1}{2}$ net income), . . . . .	429.00	
<b>David Sears</b> , . . . . .	1,711.97	
<b>Augustus Story</b> , . . . . .	642.24	40,061.20
Anonymous Gift (1902). Gift, . . . . .	\$20,000.00	
Interest, . . . . .	275.33	20,275.33
<b>Mrs. Henry Draper</b> , gift for special research (additional), . . . . .	\$9,999.96	
Interest on unexpended balance, . . . . .	14.35	10,014.31
Use of house by College officer, . . . . .	\$600.00	
Sale of Annals, . . . . .	88.45	
" lantern slides, . . . . .	6.00	
" star charts, . . . . .	6.90	
" grass, . . . . .	70.00	791.35
Gifts for immediate use, . . . . .		818.00
		<u>\$91,445.10</u>

PAYMENTS.

From Anonymous Gift (1902), addition to brick building, . . . . .	\$3,278.37
" Advancement of Astronomical Science (1902), honorarium, . . . . .	200.00
" <b>Bruce Gift</b> , apparatus, . . . . .	94.66
" <b>Uriah A. Boyden Fund</b> , supplies, apparatus, services, &c., . . . . .	8,516.07
" <b>Draper Memorial</b> , supplies, apparatus, services, &c., . . . . .	7,313.70
Salaries, . . . . .	\$13,900.00
Services and wages, . . . . .	7,018.13
Repairs and improvements, . . . . .	2,668.05
Cleaning and care of Observatory, . . . . .	533.58
Labor, . . . . .	1,352.85
Fuel, . . . . .	500.58
Amounts carried forward, . . . . .	<u>\$25,973.14</u> <u>\$19,402.80</u>



TABLE NO. X, OBSERVATORY, CONTINUED.

## PAYMENTS.

Amounts brought forward, . . . . .	\$25,973.14	\$19,402.80
Water, . . . . .	97.87	
Lighting, . . . . .	108.82	
Printing, . . . . .	3,473.93	
Furniture, . . . . .	272.48	
Cases, . . . . .	838.50	
Instruments and apparatus, . . . . .	562.71	
Stationery, postage, and telegraphing, . . . . .	625.94	
Telephone, . . . . .	65.08	
Books, . . . . .	386.85	
Binding, . . . . .	362.42	
Supplies and materials, . . . . .	1,176.56	
Freight, . . . . .	349.28	
Sundries, . . . . .	80.58	
Use of house, . . . . .	90.00	
Electric power, . . . . .	111.48	
Jamaica Expedition expenses, . . . . .	203.64	
Part of expenses of the Peruvian expedition, . . . . .	2,517.05	
“ “ for stellar photographs, . . . . .	1,117.85	38,864.18
		<u>\$57,766.98</u>

TABLE NO. XI.

## BUSSEY INSTITUTION.

## RECEIPTS.

## Income of Funds.

Bussey Institution (balance), . . . . .	\$1,805.12	
Bussey Trust ( $\frac{1}{2}$ net income), . . . . .	9,888.51	\$11,148.63
Tuition fees, . . . . .		3,255.00
Sale of wood, hay, and sundries, . . . . .	\$131.62	
Horticultural Departm't, prizes, sale of flowers, plants, &c., . . . . .	2,219.38	
Board of animals, . . . . .	6,495.45	
Use of house by College officer, . . . . .	600.00	
Damage to grass land, . . . . .	187.66	
Repayment of part of cost of seeding grass land, . . . . .	93.88	9,727.94
		<u>\$24,126.57</u>

## PAYMENTS.

Salaries, . . . . .	\$7,450.00
Services and wages, . . . . .	3,314.06
Repairs and improvements, . . . . .	1,160.30
Gas, . . . . .	49.70
Water, . . . . .	20.00
Printing, . . . . .	54.31
Amount carried forward, . . . . .	<u>\$12,048.37</u>

TABLE No. XI, BUSSEY INSTITUTION, CONTINUED.

## PAYMENTS.

Amount brought forward, . . . . .	\$12,048.37	
Furniture, . . . . .	2.25	
Stationery and postage, . . . . .	7.49	
Books, . . . . .	101.86	
Binding, . . . . .	42.80	
Insurance, . . . . .	253.75	
Horticultural Department, expenses, . . . . .	2,454.35	
Grain, farming tools, &c., . . . . .	2,129.63	
Legal expenses, . . . . .	27.00	
Diplomas, . . . . .	25.00	
Sundries, . . . . .	25.62	
New greenhouses, . . . . .	7,357.27	\$24,475.89

TABLE No. XII.

## ARNOLD ARBORETUM.

## RECEIPTS.

Gifts for capital account.		
<b>Arnold Arboretum Fund (additional), . . . . .</b>		<b>\$44,760.00</b>
Income of Funds.		
<b>Arnold Arboretum, . . . . .</b>	<b>\$4,553.66</b>	
<b>James Arnold, . . . . .</b>	<b>7,629.50</b>	
<b>William L. Bradley, . . . . .</b>	<b>1,068.58</b>	
Gifts for construction, . . . . .	323.10	13,574.84
Sale of grass and materials, . . . . .	\$3,077.31	
Gift for present use, . . . . .	2,500.00	
Gift for cases for Jessup collection of North American woods, . . . . .	2,800.00	8,377.31
		<u><u>\$66,712.15</u></u>

## PAYMENTS.

<b>William L. Bradley Fund, bibliography, . . . . .</b>	<b>\$1,220.21</b>	
Salary of Director and Assistant, . . . . .	3,500.00	
Repairs and improvements, . . . . .	603.57	
Labor, . . . . .	8,082.16	
Fuel, . . . . .	317.50	
Water, . . . . .	49.00	
Printing, . . . . .	1.56	
Furniture, . . . . .	148.72	
Stationery and postage, . . . . .	265.18	
Services and wages, . . . . .	4,004.65	
Supplies, tools, and materials, . . . . .	1,200.17	
Freight, . . . . .	366.14	
Rent of land leased from Adams Nervine Asylum, . . . . .	150.00	
Expenses of expeditions for collecting, . . . . .	404.96	
Sundries, . . . . .	2.41	
Cases for Jessup collection of North American woods, . . . . .	2,800.00	\$23,116.23

TABLE NO. XIII.  
SCHOOL OF VETERINARY MEDICINE.

RECEIPTS.

Fees from Hospital and Forge, . . . . .	\$243.24	
Telephone charges refunded, . . . . .	34.65	
Sale of furniture, . . . . .	41.85	\$319.74

PAYMENTS.

Scholarships, . . . . .	\$60.00	
Tuition fees of Students at other schools, . . . . .	715.00	
Repairs, . . . . .	80.68	
Lighting, . . . . .	1.80	
Instruments and apparatus, . . . . .	3.20	
Stationery and postage, . . . . .	2.00	
Taxes, . . . . .	24.96	
Services and wages, . . . . .	96.60	
Supplies and sundries, . . . . .	12.91	
Interest on advances, . . . . .	1,220.30	\$2,167.40

TABLE NO. XIV.

MISCELLANEOUS FUNDS.

Sundry Funds for Special Purposes.

*Receipts.*

Income of Funds, Gifts, &c.		
Advancement of Astronomical Science (1901), . .	\$2,380.51	
"    "    "    "    (1902)(part), . . . . .	150.00	
Anonymous (part), . . . . .	100.00	
<b>Edward Austin.</b> Interest, . . . . .	\$22,613.23	
Loans repaid, . . . . .	214.17	
	\$22,827.40	
Less approp'ns as per tables II and VI, 18,019.48	4,807.92	
<b>Bussey Trust</b> , net income from Real Estate, . .	28,677.08	
<b>Class of 1834</b> , . . . . .	49.98	
" <b>1844</b> , . . . . .	287.79	
" <b>1853</b> , . . . . .	149.00	
<b>Caroline Brewer Croft</b> (part), . . . . .	2,531.18	
<b>Calvin and Lucy Ellis</b> " . . . . .	91.68	
"    "    " <b>Aid</b> (part), . . . . .	819.77	
<b>Free Bed Fund of the Class of 1868</b> , . . . . .	244.08	
"    "    for <b>Stillman Infirmary</b> , . . . . .	24.72	
<b>Gifts for additions to The Soldier's Field</b> , . . . . .	100.96	
" <b>Improvements and Additions to</b> <b>The Soldier's Field. Gifts</b> , . . \$57,919.72		
Interest, . . . . .	1,762.46	59,682.18
Amount carried forward, . . . . .	\$95,096.80	

## TABLE NO. XIV, MISCELLANEOUS FUNDS, CONTINUED.

**Sundry Funds for Special Purposes** (*continued*).

<i>Receipts.</i>		
Amount brought forward, . . . . .		\$95,096.80
<b>Income of Funds, Gifts, &amp;c.</b> ( <i>continued</i> ).		
Gifts for Cuban Teachers. Interest, . . .	\$12.35	
Repayment, . . . . .	303.50	315.85
Gift for The Harvard Union, . . . . .		169.28
Gifts for Land in New Hampshire, . . . . .	\$800.00	
Interest, . . . . .	29.43	829.43
<b>Gospel Church</b> ( $\frac{1}{4}$ income), . . . . .		148.23
<b>Gurney</b> (part), . . . . .		1,000.00
<b>Charles L. Hancock</b> (part), . . . . .		38.27
Harvard Memorial Society, . . . . .		60.48
<b>Robert Troup Paine</b> (accumulating), . . . . .		1,387.32
Professorship of Hygiene (part), . . . . .		2,000.00
<b>John W. and Belinda L. Randall</b> , . . . . .		256.61
<b>Nelson Robinson, Jr.</b> , . . . . .	\$14,400.00	
Less amount entered in Table II, . . . . .	9,400.00	5,000.00
School of Comparative Medicine. Gift, . . . . .	\$1,000.00	
Interest, . . . . .	225.46	1,225.46
<b>Alexander W. Thayer</b> (part), . . . . .		480.00
<b>Henry P. Walcott</b> , . . . . .		121.15
<b>Charles Wilder</b> , . . . . .		1,920.00
<b>Daniel Williams</b> , . . . . .		785.76
<b>Sarah Winslow</b> , . . . . .		229.92
Woodland Hill, . . . . .		505.82
		<b>\$111,570.38</b>

*Payments.*

From the following Funds and Gifts.

Advancement of Astronomical Science (1901), annuity, . . . . .	\$2,088.55
Advancement of Astronomical Science (1902), annuity, . . . . .	150.00
Anonymous, annuity, . . . . .	100.00
<b>Bussey Trust.</b> Annuities, . . . . .	\$4,000.00
One half of the remaining income to the <b>Bussey</b> Institution, . . . . .	9,838.51
One quarter to the Divinity School, . . . . .	4,919.26
One quarter to the Law School, . . . . .	23,677.03
<b>Class of 1853</b> , to the Secretary, . . . . .	149.00
<b>Caroline Brewer Croft</b> , annuity, . . . . .	2,162.58
<b>Calvin and Lucy Ellis</b> , taxes and plans, . . . . .	91.68
" " " Aid, taxes, . . . . .	506.60
Gifts for Cuban Teachers, expenses, . . . . .	2,120.22
Gift for <b>Harvard Union</b> , . . . . .	10,265.39
Gifts for land in New Hampshire, . . . . .	2,799.06
<b>Gurney</b> , annuities, . . . . .	1,000.00
Amount carried forward, . . . . .	<b>\$45,110.11</b>

TABLE NO. XIV, MISCELLANEOUS FUNDS, CONTINUED.

Sundry Funds for Special Purposes (*continued*).*Payments.*

Amount brought forward, . . . . .	\$45,110.11	
From the following Funds and Gifts ( <i>continued</i> ).		
<b>Charles L. Hancock</b> , taxes on Chelsea real estate, . . . . .	38.27	
Professorship of Hygiene, annuity, . . . . .	2,000.00	
<b>John W. and Belinda L. Randall</b> , Harvard Social Service Committee, . . . . .	200.00	
<b>Alexander Wheelock Thayer</b> , annuity, . . . . .	480.00	
<b>Charles Wilder</b> , annuity, . . . . .	1,279.10	
<b>Daniel Williams</b> , Treasurer of Mashpee Indians, . . . . .	512.24	
<b>Sarah Winslow</b> , Minister at Tyngsborough, Mass., . . . . .	\$109.59	
Teacher " " " " " " . . . . .	109.59	
Commission on income, credited to Univ., . . . . .	5.75	224.93
<b>Woodland Hill</b> , taxes and legal services, . . . . .	964.31	\$50,808.96

## Construction Accounts.

*Receipts.*

<b>Nelson Robinson Jr. Hall.</b> Gifts, . . . . .	\$15,000.00	
Interest, . . . . .	1,016.68	\$16,016.68
Brighton Marsh Fence, interest, . . . . .		3.83
<b>Pierce Hall.</b> Gift, . . . . .	\$1,335.00	
Interest, . . . . .	521.84	1,856.84
Semitic Building. Gift, . . . . .	\$6,000.00	
Interest, . . . . .	1,003.12	7,003.12
<b>John Simpkins Hall.</b> Gift, . . . . .	\$5,000.00	
Interest, . . . . .	52.88	5,052.88
<b>Stillman Infirmary</b> , interest, . . . . .		869.07
University Museum, interest, . . . . .		472.46
Building for the Department of Philosophy. Gift, . . . . .	\$1,000.00	
Interest, . . . . .	1.70	1,001.70
<b>Rotch Laboratory addition.</b> Gift, . . . . .	6,600.00	\$38,876.58

*Payments.*

For <b>Nelson Robinson Jr. Hall.</b>		
Construction, . . . . .	\$51,096.83	
Furniture, . . . . .	20,652.91	
Equipment, . . . . .	15,702.11	\$87,451.85
For Brighton Marsh Fence, . . . . .		100.00
" <b>Pierce Hall</b> , construction, furniture, and equipment, . . . . .	118,644.80	
" <b>Rotch Laboratory addition</b> , interest on advances, . . . . .	166.88	
" <b>Semitic Building</b> and furniture, . . . . .	84,833.08	
" <b>John Simpkins Hall</b> , . . . . .	3,648.20	
" <b>Stillman Infirmary</b> , construction, furniture and equipment, . . . . .	24,122.86	
" <b>University Museum</b> , . . . . .	40,205.61	\$309,173.28

TABLE NO. XIV, MISCELLANEOUS FUNDS, CONTINUED.

## Sundry Accounts.

		<i>Receipts.</i>	
Bursar's Sundry Accounts, . . . . .			\$498,864.49
Advances from General Investments to Fund for the Advancement of Astro- nomical Science (1902), . . . . .		\$17.56	
Classical Publication Fund of the Class of 1856, . . . . .		963.91	
Caroline B. Croft Fund, . . . . .		85.70	
Medical School Undertaking, . . . . .	472,588.60		
Observatory, . . . . .	2,921.85		
Peabody Museum of American Archaeology and Ethnology, . . . . .		671.90	477,248.92
<b>Gains and Losses for General Investments.</b>			
Gain on sale of Brattle St. Reversion, . . . . .	\$295,816.25		
"    "    \$100,000 Bangor & Aroostook (Van Buren Exten.) 5's, . . . . .	7,478.74		308,289.99
<b>Gains from change of Special Investments.</b>			
<b>Price Greenleaf Fund.</b>			
Gain on sale of 800 shares Rut- land R. R. pref., . . . . .		\$69,584.00	
David Ames Wells Fund. Gain on sale of sundry securities, . . . . .	13,191.60		82,775.60
Rotch Laboratory addition, from College Account to pay deficit and part of advances, . . . . .			204.50
School of Veterinary Medicine, from University Ac- count to pay deficit of 1901-02, . . . . .			1,847.66
<b>Transfers to</b>			
Henry L. Pierce Building Fund, from Henry L. Pierce Residu- ary Bequest, . . . . .		\$36,119.90	
Calvin and Lucy Ellis Fund, from Calvin Ellis Fund, . . . . .		816,787.42	
"    Lucy Ellis    "    . . . . .		60,961.27	
F. B. Greenough Fund for Surgi- cal Research, from Surgical Laboratory Fund, . . . . .		1,000.00	
Gray Herbarium, from Francis H. Peabody's Gift, . . . . .		100.00	
Philosophy Building Gifts, from School of Comparative Medi- cine Fund, . . . . .	1,115.88	416,034.47	\$1,779,760.63

TABLE NO. XIV, MISCELLANEOUS FUNDS, CONTINUED.

Sundry Accounts (*continued*).*Payments.*

Bursar's Sundry Accounts, . . . . .	\$506,759.82	
Advances from General Investments, repaid by		
Botanic Department, . . . . .	\$18,818.82	
Addition to Botch Laboratory, . . . . .	6,687.62	19,955.94
Losses from change of Special Investments.		
Price Greenleaf Fund.		
Loss on sale of \$2,000 Chicago, Burl. & Quincy R. R. 3½'s, . . . . .	\$10.00	
David Ames Wells Fund.		
Loss on sale of sundry securities, . . . . .	1,180.95	1,190.95
Sundry balances, . . . . .		1,318.20
Transfers from		
Henry L. Pierce Residuary Bequest, to Henry L. Pierce B'ld'g Fund, \$36,119.90		
Calvin Ellis Fund, to Calvin and Lucy Ellis Fund, 316,787.42		
Lucy Ellis Fund, to Calvin and Lucy Ellis Fund, 60,961.27		
Surgical Laboratory Fund, to F. B. Greenough Fund for Surgical Research, . . . . .	1,000.00	
Francis H. Peabody's Gift, to Gray Herbarium, . . . . .	100.00	
Robert C. Billings Fund (Uni- versity Account), to Robert C. Billings Fund (Medical School Undertaking), 92,500.00		
Henry L. Pierce Residuary Bequest, to Henry L. Pierce Fund (Medi- cal School Undertaking), . . . . .	350,000.00	
School of Comparative Medicine Fund, to Philosophy Building Gifts, . . . . .	1,115.88	
School of Comparative Medicine Fund, to School of Comparative Medicine Fund (Medical School Under- taking), . . . . .	4,481.98	
Gift for Pathological Laboratory (School of Veterinary Medicine), to Gift for Pathological Laboratory (Medical School Undertaking), . . . . .	5,166.88	868,132.88 \$1,897,857.74

## GENERAL SUMMARY OF THE TABLES.

Table.	Receipts.	Payments.
I. University, . . . . .	\$166,013.09	\$122,409.73
II. College, . . . . .	986,903.35	723,796.70
III. Library, . . . . .	52,400.66	67,914.16
IV. Divinity School, . . . . .	48,685.57	39,159.30
V. Law School, . . . . .	122,096.03	79,749.27
VI. { Medical School, . . . . .	163,059.77	164,074.36
{ " " Undertaking, . . . . .	1,113,825.57	663,101.36
VII. Dental School, . . . . .	21,511.72	25,898.23
VIII. Museum of Comparative Zoölogy, . . . . .	85,780.90	33,113.31
IX. Peabody Museum of American Archaeology and Ethnology, . . . . .	15,869.66	9,870.83
X. Observatory, . . . . .	91,445.10	57,766.98
XI. Bussey Institution, . . . . .	24,126.57	24,475.39
XII. Arnold Arboretum, . . . . .	66,712.15	23,116.23
XIII. School of Veterinary Medicine, . . . . .	319.74	2,167.40
XIV. { Sundry Funds for Special Purposes, . . . . .	111,570.38	50,908.96
{ Construction Accounts, . . . . .	38,876.58	309,173.28
{ Sundry Accounts, . . . . .	1,779,760.63	1,397,357.74
	<b>\$4,788,956.47</b>	<b>\$3,793,953.23</b>
	<u>3,793,953.23</u>	
Net increase of the Funds and balances, . . . . .	\$995,003.24	
Deduct gifts for capital account, . . . . .	727,845.58	
Balance, which is the net increase of Funds and balances, excluding gifts for capital account, as is also shown on page 55, . . . . .	<b>\$267,157.66</b>	



*Certificate of the Committees of the Corporation and Overseers of Harvard College, for examining the Accounts of the Treasurer.*

The committees appointed by the Corporation and Overseers of Harvard College to examine the accounts of the Treasurer for the year ending July 31, 1902, have, with the assistance of an expert chosen by them, examined and audited the Cash-book and Journal covering the period from August 1, 1901, to July 31, 1902, inclusive, and have seen that all the bonds, notes, mortgages, certificates of stock, and other evidences of property, which were on hand at the beginning of said year, or have been received by him during said year, are now in his possession, or are fully accounted for by entries made therein; they have also noticed all payments, both of principal and interest, indorsed on any of said bonds or notes, and have seen that the amounts so indorsed have been duly credited to the College.

They have in like manner satisfied themselves that all the entries for moneys expended by the Treasurer, or charged in his books to the College, are well vouched; such of them as are not supported by counter entries being proved by regular vouchers and receipts.

They have also seen that all the entries for said year are duly transferred to the Ledger, and that the accounts there are rightly cast, and the balances carried forward correctly to new accounts.

(Signed,)

HENRY P. WALCOTT, } *Committee on the part of the*  
ARTHUR T. CABOT, } *Corporation.*

F. L. HIGGINSON, } *Committee on the part of the*  
MOSES WILLIAMS, } *Board of Overseers.*  
ALFRED BOWDITCH, }  
STEPHEN M. WELD, }

Boston, January 3, 1903.





## THE UNIVERSITY PUBLICATIONS

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Act of July 16, 1894.]

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Issued twice a month from September to April inclusive, and  
six times a month from May to August inclusive.

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These publications include:—

The Annual Reports of the President and of the Treasurer.  
The Annual University Catalogue.  
The Annual Catalogues of the College and the several Professional Schools of the University; the Announcements of the several Departments; etc., etc.



